

SUPPLEMENT.

The Mining Journal.

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1449.—VOL. XXXIII.]

LONDON, SATURDAY, MAY 30, 1863.

[WITH STAMPED... SIXPENCE.
JOURNAL] UNSTAMPED, FIVEPENCE.

MONEY MAKING—No. IV.

The operation immediately succeeding that of cutting out the blanks, or planchets, of gold or silver intended for conversion into coin, is the weighing of them. This is one of the most delicate processes performed in the Mint. It is especially so in regard to the gold coinage, which requires the greatest exactitude. The Weighing-room is worthy the nature of the work performed within its walls. It is a well-proportioned and handsomely-appointed apartment. Nothing within the Mint, indeed, proclaims more emphatically the advancement of mechanical science than this branch of it. The twelve machines which it contains are of the most admirable description, and are known as Automaton Balances. Originally a staff of twenty workmen were employed to perform a duty which the automatons now accomplish with much greater accuracy than this little army of "sizers" were able to attain. That duty consists in the weighing, individually, each planchet of precious metal, of accepting all which are within the legal limit, or "remedy," allowed by law on either side the theoretical standard weight of the particular coin to be produced, and of rejecting all that are out of remedy—that is, too heavy or too light.

It will be readily understood that in so delicate a task as that of weighing sovereign planchets—the extreme variation as regards the weight of which must not exceed half a grain—great care is required. The machinery to effect it must be of the most perfect description, and in the best working order. These conditions are complied with at the Mint, and hence the action of the automaton balances is almost infallible. Their decisions are just, and they, consequently, seldom or never reject a planchet which ought to be accepted.

Each machine is placed upon a low cast-iron table with four legs, and the surface of which has been planed and polished. The feet of these tables rest upon a base of stone, brickwork, and concrete. They are ranged in straight line along one side of the long and lofty room, and they are, through having independent foundations, isolated from the walls, and unaffected by the tremor of the weighty machinery in motion in other departments of the Mint. A small atmospheric-engine placed in a corner of the apartment gives motion by means of a strap and drums to a line of small, bright, overhead shafting, traversing its length, and suspended by handsome brackets from the ceiling. The engine is connected by means of a 2-in. pipe of wrought-iron with a vacuum chamber, of which we shall have to speak hereafter, and the air of the room rushing through a kind of gun-metal trumpet is admitted, by a slide motion, alternately above and below the piston, as steam would be in an ordinary steam-engine. The object of the atmospheric-engine is to obtain uniformity of speed for the automatons, and absolute isolation from all other acting machinery. A fly-wheel, governor, side rods, &c., go to make the engine resemble yet further a high-pressure steam-engine.

On the shaft above are placed a series of three motion pulleys or riggers, one pulley for each automaton, and over these pass fine gut bands, for communicating motion to the latter. Friction pulleys are placed on the small steel spindles of the machines, and these enable the attendant by mere pressure of thumb and finger to disengage and stop a machine at a moment's notice. A long brass semicircular spout or duct is attached to each machine, and stands at a convenient angle for conveying the planchets down to the tiny scale-tables upon which they are separately to rest while their weights are taken, and their fate or fortune decided. Each automaton, it may be said, is enclosed within sheets of plate-glass, and this increases their resemblance to skeleton drawing-room clocks. Assuming now that the officer in charge of these quiet, yet truth-telling umpires of the Mint's workmanship, has received into his charge a batch of golden planchets as they came from the cutting-out presses—dull and spiritless looking candidates for the honour of sovereignty—he first weighs them in bulk at an ordinary balance, and notes carefully the result. He then distributes them among his mute assistants, through the media of the feeding tubes. By the law of gravitation the rouleaux of golden discs fall, or slide rather, to the bottom of the inclined feeders.

If we examine one of the machines now, we shall observe that a small steel slider is constantly advancing and receding at the foot of the feeding tube. Each time it advances it displaces a planchet, and forces it gently forward to a horizontal disc of polished steel, of rather larger size than the piece of gold. This is in truth the scale-table, so to speak, and it surmounts one end of a delicately poised steel beam. On this table the planchet rests for the space of about three seconds. Should it prove "heavy" it depresses the beam, which is loaded at the opposite extremity by a glass counterpoise weight, to which is dependent a "remedy" wire of the heaviest legal limit. This denotes its unfitness for coinage, and when the slider is advancing with another planchet pushes it from its seat it falls through a flattened tube into the "too heavy" compartment below. Supposing its successor to be lighter than the law allows, the beam and its golden burden will be raised by the glass counterpoise, which, without the remedy wire, is of the lowest legal limit of weight, and it will descend on the advance of its next neighbour to the receptacle for such defaulters.

Should the third planchet comply with the requirements of its automaton judges, and neither move, nor be moved by, the glass counterpoise, it, in its turn, will pass into the receiver for medium pieces, and stand the best possible chance of having sovereign honours conferred upon it. These operations go on daily during a gold or silver coinage; and at the rate of about 20 per minute each machine selects and separates the planchets entrusted to the ordeal of weightment, in strict accordance with their merits. As a rule, the quantity of rejected amounts to 4 or 5 per cent., and the accepted, of course, to 95 or 96 per cent.

Such—it is to be feared very imperfectly described—is the mode in which the automaton balances of the Mint perform their important tasks. Were we to enter minutely into a description of their mechanical peculiarities, too much space would be occupied in the Journal; and, after all, it is doubtful whether a perfectly clear conception of them could be conveyed without diagrams, which cannot at present be furnished. If a general idea has been given of the nature of the Mint weighing-machines that is all that can be hoped for, or at least all that can be expected in so brief a form of "Money Making" paper as that now in course of publication. It would be unjust to pass from the weighing-room without stating that to the conception, in the first instance, of Mr. Cotton, of the Bank of England, and to the admirable skill and accurate workmanship of Mr. J. Napier, the celebrated engineer, of the York-road, Lambeth, in the second, are the public indebted for the splendid specimens of automatic machinery mentioned above.

It would be an ungracious omission, too, were it not to be stated that the officer of the weighing-room has introduced some minor improvements into his department. Among them is a filing apparatus for reducing the

weight of "too heavy" blanks, and saving them from relegation to the melting-house. It may be a question as to whether the weighing operation should not be performed upon coined pieces rather than planchets, and become the final process performed at the Mint; but so long as planchets are weighed some means of reducing the "too heavy" ones is a desideratum. If the Mint filing machine be not mechanically a proper implement for its purpose, it is not a discreditable contrivance, and its inventor deserves praise for devising it.

Allowing, now, that all the pieces of gold brought into the Weighing-room during a working day at the Mint have passed through the ordeal, a gathering up of good, bad, and indifferent will be made, together with all filings or "limail," as the technical term goes, scraps, and every vestige of the precious metal, and the whole will be weighed. The good planchets, deposited in bags, will be forwarded to the next room in which they are to be dealt with. The scrap, or scissell, including "dumb" planchets, which are, in fact, cracked pieces, arising from original defects or air-bubbles in the bars from which they have been cut, are all condemned to the crucible once more, and will be returned to the melter for re-casting.

The officer, assured that he has duly received at his large balance all the metal which he gave out for assortment, will ticket the good work with its weight to the hundredth part of an ounce, deposit the whole in safety, envelope in canvas clothing his twelve automaton friends, with an auxiliary machine seldom used, and dismiss his workpeople to the outer world. It is certain that nothing short of a visit to the Mint weighing-room can enable one to realise fully its mechanical arrangements, and this is not now, thanks to the courtesy of the authorities there, a matter difficult of accomplishment. With an apology for the meagreness of this attempted description of that place, we leave the subject of Money Making till next week's Journal.

COPPER MINING IN SOUTH AUSTRALIA.

In last week's Journal we referred to the publication of an excellent work, by Mr. J. B. Austin, of Adelaide, descriptive of the various mines and smelting works in the Colony. We now extract the particulars of those mines in which the English public are more especially interested: on another occasion we shall give those under Colonial management:—

THE KAPUNDA MINE.—In a work like the present there is some slight difficulty in determining the order in which to notice the various mines. The proprietors of mines in one locality are jealous of those in another. The Wallaroo people affect an amount of disbelief in the northern mines, and those interested in the North, on the other hand, believe their mines to be superior to those at Wallaroo. I had thought of noticing the mines in the order of their discovery, but this plan would have been attended with some inconvenience, and I, therefore, decided on describing them as nearly as possible in reference to their geographical position. This will obviate certain little difficulties, and will enable me the more readily to introduce a description of the country traversed in visiting the mines. Starting from Adelaide in a northerly direction, we ride 26 miles over plains between ranges of hills on the east and the sea on the west, and varying in width from 8 to 12 miles. These plains, which at the time of the discovery of the Kapunda Mine were almost entirely uncultivated, and occupied only as sheep runs, are now covered with farms, every available portion of them being either brought into cultivation, or enclosed as grazing paddocks. After passing Gawler, on the road to Kapunda, the country becomes more hilly, and lightly timbered. There is nothing remarkable in the geological formation of the country until we reach the Kapunda Mine, after a ride of 24 miles from Gawler. This mine is the oldest copper mine in the colony, having been discovered in 1843 by Mr. Francis S. Dutton and Mr. Chas. Sam. Bagot (now of London), the youngest son of Capt. Charles Harvey Bagot, then a sheep-farmer, and also a member of the Legislative Council. The mine workings are on hilly ground of moderate elevation, and which was originally lightly timbered with peppermint gum, but the settlement of the adjoining township, the working of the mine, and above all the carrying on of smelting operations, have denuded the country of almost every stick of timber for miles round. Abundance, however, remains for the requirements of the mine for some years to come, and within a moderate distance for cartage. The first ore was raised at the Kapunda Mine on Jan. 8, 1844, and on the 29th of the same month five dry loads were dispatched to Adelaide. I had then just arrived in the colony, and well remember the excitement caused by this commencement of the development of one of the most important sources of the wealth of the colony. The ore was good, the mine promised well, and search soon began to be made for copper ore in other directions, and it was not long before further discoveries were announced. All the ores raised are now reduced to fine copper before shipment; 595 tons were shipped in 1861. The expenditure during the year being 48,300*l.*, the greater portion of which is circulated on the spot for wages, fuel, &c.: 8718*l.* was paid for fuel for the smelting works alone, timber being alone used. The entire quantity of ore raised from the commencement to the close of the year 1862 was 38,220 tons of 21 cwt., and of an average produce of nearly 20 per cent. The quantity raised during the past year was 2940 tons, of an average of 16½ per cent. The quantity of fine copper made during the year 1862 was 486 tons 12 cwt. The total value of the ore raised from this mine has been about half a million sterling. The Kapunda Mine has been worked, on the whole, carefully and economically, and but little of the produce has been lost, which it would have been possible to save with the appliances at command. However, as the depth of the workings increases, and the average percentage of the ore becomes less, it will be necessary to employ new and improved machinery for dressing the ores of lower percentage than it has hitherto been thought worth while to deal with; and this course, I am informed, is about to be adopted, the manager of the mine having recently paid a visit to the Bremer Mine to inspect the machinery in use there, that mine being decidedly the most economically and thoroughly worked of any in the colony. A large township (Kapunda) has sprung up near the mine, and contains several substantial buildings, and amongst others four commodious places of worship, a bank, a mechanics' institute, post office and telegraph station, court-house and police station, several hotels, a fine railway station,—for Kapunda is now united with Adelaide by the iron road, trains running daily twice each way. There are a number of good shops and houses, and the population probably numbers altogether about 3000*l.*

THE BON ACCORD MINE is situated so close to the Burra that from a short distance the buildings and workings of the two mines appear to belong to one establishment. The land on which the Bon Accord Mine is found was purchased by a Scotch company, now known as the Scottish Investment Company. Its close proximity to the Burra first led to the ground being taken up; and I believe there were some slight indications of the existence of copper. A considerable amount of work has been done, and a large sum expended on the mine. Favourable indications have appeared to warrant the outlay, and some of the piles of stuff have been raised look as if they would at not pay for dressing; they are so impregnated with particles of ore, amongst which may be detected red oxide and black ore. The engine-shaft is sunk to a depth of 50 fms., and there is a large cross course which, it is thought, will probably intersect a lode of ore. Other shafts have been sunk on this property, and a considerable length of drives has been opened underground, but without any very satisfactory result. This company really deserve to be more fortunate, for the steady perseverance with which they have worked on in spite of discouragement. Some mineral sections have been taken out about 20 miles north of the Burra, but I am not aware of any mine that has been worked to any extent in that direction. However, a little to the west of north, and from 22 to 28 miles from the Burra, we come upon a batch of mines on the Broughton River.

THE MINES OF THE GREAT NORTHERN COPPER MINING COMPANY OF SOUTH AUSTRALIA.—

The **MOORE STUART MINE** is at present not being worked. A large mass of rocks appears to have crossed a gully, and been cut through by the force of water, or some other effort of Nature. They contained stains of copper, and a good vein of ore. Two shafts were sunk near the rocks, one on each side the gully, and there was some ore on the floors, blue and green carbonates, but the general appearances were not favourable. One of these shafts was sunk 10 fms., and a drive was then carried 10 fms., but without cutting the lode. Proceeding onwards we come to a station of Messrs. Chambers and Finke, called Bonhomie West, and here we found a fine spring of water and good country; from near this place we had a fine view of Mount Deception, and a large extent of hilly country on this side of it.

NUCALLEN.—On leaving the Wirryoota we had a pleasant ride of 10 or 12 miles to Nuccalleena, where we arrived about 8 P.M. This mine had an immense surface deposit

of rich ore, on the side of a hill, from which above 600 tons were taken. The lode was then lost, and the water stopped further progress, until the engine was erected. After the water was in fork (all pumped out) the lode was recovered at the 10 fm. level, and when I visited the mine it presented a most encouraging appearance. The lode was proved for 18 fms. in length, with well-defined walls, and underlying 18 inches in the fathom; the width of the ore (black oxide and sulphurets) being from 5 to 7 feet. A winze was sunk 3 fms. 5 ft. on the lode, and from it 7 tons of good ore raised, the quality improving with the depth. The engine-shaft is 18 fms. in depth, having been commenced about 12 fms. above the level of the creek, in the side of the hill. The stopes are 33 fms. north of east from the engine-shaft, and five levels have been driven on the course of the lode, all the backs and bottoms being stopped away. An adit was driven into the hill, and out the lode in 9 fms., and which was then driven on for 40 fms., a large amount of stoping being done. At the 10 fm. level a winze is sunk, about 15 fms. east of winch-shaft, leaving that extent of ground which carries the lode recently recovered. The main cross-cut was 22 fathoms south into the hill to cut the lode, but was temporarily stopped. If it prove successful it will give the slope of all the hill, and enable a tramway to be laid to convey the ore to the floors. The mine is under the superintendence of Capt. Pearson Morrison, a gentleman of considerable experience both in Cornwall and America. This mine presents a more pleasing appearance, as to its buildings and all the arrangements at grass, than any mine in the North; there is an air of comfort as well as of business about the place, which its more recent competitors have not yet attained to. Moreover, the 16-in. cylinder steam-engine adds very much to the appearance of the mine. This, which is a low pressure condensing engine, was made by Mr. G. Wyatt, of Adelaide, for the Ready Creek Mine; it was then used for a time at Charlton Mine, and at last found its way here, being the first engine erected in the Far North. The captain's apartments, office, and three other buildings of stone, are erected on a terrace opposite the engine, and present a frontage of nearly 100 ft. There are also substantial stone stables, a good store, smith's shop, workshop, &c., besides a general store, established for the purpose of supplying the wants of the miners; also a doctor's house, and about 20 good pine huts for the men. A Mechanics' Institute has been formed here, and the men seem to devote themselves after work to useful study, or to innocent recreation. They have established a judge and jury club, for the trial of petty offences amongst themselves, and it has been found to work well. There is also a good musical band, including some good singers among its members, the instrumental part consisting of a drum, triangle, "bones," violin, and a concertina. On the evening of my arrival the band was "discussing sweet music," the sound of which, reverberating through the hills, was very entrancing, especially to weary travellers, who had been long absent from anything of the kind. Another of the company's properties is—

THE TWO BROTHERS.—It is situated about two miles nearly north of Nuccalleena, on a hill of some altitude. At first this mine looked exceedingly promising, a lode of rich red oxide, 2 ft. in width, being traceable the whole length of the section, but when they commenced sinking and driving the lode was lost. I can hardly conceive that a regular lode of this nature would be succeeded by nothing in depth, and I should hope that when a favourable opportunity presents itself researches will be resumed in this quarter. The next of the Great Northern Company's Mines I have to notice is—

THE ORATUNGA MINE.—It is situated about seven miles south-east of Nuccalleena, amidst low hilly country. There is a good lode, averaging about 12 ft. in width, and containing very fair ore. Shafts have been sunk on the lode, varying in depth from 6 to 15 fms., and ore was obtained in each, nearly 100 tons being raised. At a depth of about 12 or 13 fms. a peculiar slide seemed to have taken place in the lode, and a floor came in, having a slope of about 25°. This was followed down until the miners were stopped by water. In another place about 20 tons of 30 per cent. ore were raised from a caunter of the lode, and a shaft sunk, with the view of cutting the lode at 18 or 20 fms. in depth, but here the water stopped proceedings. It is intended to erect a donkey-engine, which is expected to be sufficient for keeping the water in fork for the present; and operations will then be resumed. The mine is considered a very promising one. Another of these mines is called

THE MOONOO MINE, on the edge of the eastern plain. The first indications were found here on a hill about 130 ft. in height, and which was stained with copper from top to bottom. Two shafts were sunk to depths of 6 and 8 fms. respectively, and 20 tons of ore were raised, but the water coming in rather strongly, and no regular and promising lode having been met with, the work was put a stop to. Nevertheless, there are strong indications of mineral existing in the neighbourhood, and several sections, on which ore was found scattered on the surface, were explored, but without any particular results. This mine is a few miles to the west of Prism Hill, one of the trigonometrical stations, and about 25 miles north of Mount Chambers, which is about six miles to the north of

THE MOUST CHAMBERS MINE, which is in a low country, a little to the south of the hill so called, near the eastern plain, and is situated between hills of moderate elevation. The surface of the ground is covered with boulders of primitive limestone. Several large blocks of malachite were found in a clear space, about 20 ft. wide, running north and south between the boulders. There is no regularly defined lode, although in one place the arrangement of the ore bore very much the appearance of one. Blocks of ore were obtained in three different parts of the section, at intervals of 120 or 130 yards. The country being moderately hard pipe-clay, is easily worked, and requires no timbering. Several shafts were sunk without finding a lode, although a good deal of malachite and green carbonate is scattered on the surface. The ore is rich, some samples having assayed between 50 and 60 per cent. Operations on this mine are suspended for the present.

WORTHING MINING COMPANY.—The **BREMER MINE** is the freehold property of the Worthing Mining Company, and is sometimes called the Callington Mine—Callington being the name of the surrounding township, which has sprung up since the discovery of the mine. It was first discovered in 1850, and is 36 miles from Adelaide, on the bank of the Breacraek creek, running in the Murray; though only a chain of brackish waterholes in summer. The surrounding country is flat, consisting of clay-slate, shaly rock, micaceous schist, and occasionally a little quartz. The present state of the workings may be thus described:—The engine-shaft is sunk to a depth of 53 fms., and levels have been driven at the following depths—12, 23, 33, and 43 fms., on the course of the lode, north 23° west. The total length of the drives is above 400 fms. Some fine courses of ore have been met with 5 and 6 feet wide, but occasionally rather draggy; however, at the lower levels there has been a decided improvement in this respect, fine yellow ore, of a quality superior to most of what has hitherto been raised, as well as more solid in the lode, being now in course of working at the 53 fm. cross-cut. The ore in this mine is sulphurets, of a good average quality; the prevailing ore is yellow, there is also black, and a little peacock met with: 4500 tons of ore have been raised here in five years, the large proportion of which has been obtained during the last two years. The large engine is a very fine one of 60-inch cylinder; a smaller engine (40-horse power) works the machinery, and will be used for hauling. The smelting-works, under the management of the Messrs. Thomas, are about 250 or 300 yards from the mine, and comprise one calcining and two smelting furnaces. The copper made is of the quality of 98 per cent. of pure copper, the refining process being omitted.

Notwithstanding the small average produce of the ores—only 13 per cent. lower, I believe, than any other mine in the colony—this mine is made to pay, owing to the very careful management adopted by Mr. Alfred Hallett, who devotes a very considerable portion of his time to the personal supervision of the mine. Everything is done with strict economy, and the important principle, "let nothing be wasted or lost," is fully carried out. Machinery is made largely available for reducing the ores, and thus a mine, which must at once show a loss if worked as other mines in the colony are worked, is rendered profitable to the proprietors, besides providing direct employment for 120 hands, including smelters; and indirectly providing the means of living for three or four times that number. That useful and recently-invented machine, known as "Appleton's Stonebreaker," is employed for crushing the inferior ore, preparatory to their being sorted, the best of the ore having been previously broken and picked by hand, when it is sent to the crushing rollers to prepare it for the furnace. The "smalls" are dealt with as usual, being jigged and washed. The most important machinery for washing the smalls and the slime ores is in use at this mine, consisting of a continuation of Vyan's Lake Buddle, self-acting plunge jiggers, and the revolving table, hitherto only used for washing lead ores, has been adapted by Mr. Hallett for separating the slime, and is found to answer admirably. It is, perhaps, scarcely necessary to give a description of this machinery in a work like the present, but from what I saw of its performance, I am convinced that its use in other mines would add a considerable percentage to the profits, and would enable some mines to be profitably worked, which at present yield nothing to the proprietors. Many of our mine adventurers would derive a useful lesson, and more than one, perhaps, from a visit to the Bremer Mine. There has been no extravagant outlay in handsome buildings, and "no more cats are kept than catch mice," yet everything absolutely necessary appears to be provided. I look upon this as the model mine of South Australia, and its enterprising manager, Mr. Hallett, deserves the highest praise for the judicious and persevering manner in which he has developed the property, in spite of difficulties that would have disheartened many.

WHEEL ELLEN is situated amongst hilly country, about three miles from Strathalbyn. The property, which comprises 700 acres, is freehold. It was originally worked solely as a silver-lead mine, and some fine lodes of galena and carbonates were opened, yielding from 5 to 10 tons of the former and 5 tons of the latter per fm. About 3000 tons of lead ore were raised, besides 50,000 cwt. of silver, from 1 oz. to 2 ozs. of gold in each ton of pig-lead. A very large quantity of auriferous gossan is found in this mine, which has yielded, on assay in England, from 4 to 6 cwt. of gold to

the ten: 4000 tons of ore are estimated to be in reserve in the present levels. The lode is opened on a level of 15 fms. The shaft has been sunk to various depths, and levels driven every 10 fms. Basset's shaft is 62 fms. in depth, and at the 50 fms. the lode is larger than at any other part of the mine. Scott's shaft is sunk 45 fathoms, the bottom being down in galena, and blended with yellow ore. The engine-shaft is down 50 fms., and fully prepared for the engine and pitwork now on the ground and ready to be erected. Spencer's shaft has also been sunk 30 fms., through a large lode of iron gossan, bearing gold for about 22 fms., when rich red oxide of copper made its appearance, and in the lowest depth the gossan has given place to mudiic, containing about 4 per cent. of copper. The north pit shaft is sunk 23 fms., and communicates with Spencer's, for the sake of ventilation. From the nature of the ground, and the fine lode of ore already discovered, large returns of copper are expected from this part of the mine: it is now being worked on tribute at a good profit. At the present time the water is in the mine up to just above the 40, below which there are large reserves of ore, which cannot be raised until the engine is erected. Operations at this mine are just now very slack, pending certain negotiations in England respecting the property. A fine large chimney-stack, connected with the smelting-furnaces, rises to a height of about 70 ft., and the furnaces consist of a calcining and reverberatory-furnace, also a complete blast-furnace, with a steam-engine, and every requisite. The supply of timber for smelting purposes is likely to be inexhaustible for very many years to come: it is now being delivered at 4s. 6d. per ton on the mine. Not far from Ellen's is a batch of mines known as the Monster Lode Mineral property, and the old Strathalbyn Mines.

NORTH RHINE MINE.—This mine is situated on sections 563 and 570, the company having also the adjoining sections, numbered 550 and 562—all freehold. Copper is found on the whole of the land, and one of the lodes is traced through two sections. There are two lodes running nearly parallel, in a north and south direction, with an underlie towards the west of about 15 in. in fathoms. The ore found near the surface were green and blue carbonates of promising appearance. The eastern lode was first opened, and about 20 tons of ore, averaging a little over 20 per cent. of copper, were sent to England, but as the water soon became too strong to be kept in fork by animal power, an engine-shaft was sunk near the main (or Nicholas) lode, and a 70-horse power engine and pumpwork fixed; this has been working very efficiently since March, 1860. Another shaft, near the engine-shaft, had been commenced prior to the present company taking the mine, and this was continued by Captain Barker until the lode was cut at 30 fathoms, where it was 4 feet wide, being composed of black ore, mudiic, and spar. The sinking was continued to 30 fathoms, and it was after this that the engine was sunk. The lode was, unfortunately, not found to yield ore in paying quantities when cut again in the 30 fm. level, but the indications were deemed such as to warrant further sinking. When the 43 fm. level was reached a drive was made and carried on for 70 fathoms on the course of the lode, but although the lode varied from 3 to 6 feet in width, it contained too large a proportion of mudiic to allow of it being worked to advantage. The engine-shaft has been sunk to a depth of 60 fathoms, and another drive made for 50 fathoms, but the lode unfortunately remains unremunerative, although containing black sulphuret throughout. The drive is being continued in order to communicate with a winch which is in course of sinking from the 43 fm. level.

The mines of the YUDANAMUTANA MINING COMPANY:—

We met, during the afternoon, about 20 drays loaded with ore from these mines, and carrying altogether about 60 tons. This sight tended very much to enliven the road, and the magnificent quality of the ore showed us that we were approaching a mine of no ordinary character. On one day we saw a splendid block of ore, estimated to weigh at least 4 tons, and containing throughout about 40 per cent. of copper. The prevailing ore was grey oxide, accompanied by some green carbonate and a few beautiful crystals of arsenate of copper. Another dray, in company with the former, contained two large blocks, which, together, must have weighed above 2 tons. These, we were informed, were originally part of the same block as the first mentioned. The last 40 miles of the road was, with a trifling exception, excellent, and it would be no difficult matter to drive tandem at a good pace nearly all the way. The exceptional part of the road (Compass Pass), however, can be avoided by taking a new cut, leading more to the eastward, near Illinawurina, Mr. John Scott's station, and this track is considerably shorter. I was amused, when riding alone past Comberatina, a station of Mr. Elder's, 15 miles from Yudanamutana, by some natives, who called out to know if I was "going to look for copper?" The blacks now quite understand the object of many of the whites who visit the North, and several fine sketches might be taken of the neighbouring hills; indeed, a panoramic view of the locality would be very pretty. The creek is shaded by gum trees and shrubs, the latter being 7 or 8 feet in height; and the hill sides are covered with low scrub and small flowering shrubs, with here and there a clump of pines. The first grand discovery which was made here consisted of a large boll of ore in ironstone and gossan, on the top of a low hill in the midst of the surrounding amphitheatre of mountains, and I have frequently observed a similar formation in connection with mines in the North. The hill referred to in the present case is on section "135a," and is about 80 or 90 feet above the creek, which flows on two sides of its base.

The boll of ore at the top contained altogether about 70 tons above the surface, a portion of it, on one side, is still left standing as a sample or memento of its original appearance. When an inspection of the mines of the colony was made by order of the Government, although no report was published, it was generally understood that such report would be rather damaging to most of the Northern Mines, and it was stated that the Yudanamutana Mine especially was condemned, the boll or bunch of ore on the surface being said to be all that ever would be found there, as it went down suddenly in the shape of a wedge, and ran out, and that no more than 60 tons could be raised from the hill. This assertion—which, whether it formed a part of the report handed in to the Government or not, was much talked of out of doors—has been most triumphantly refuted by the subsequent developments of the mine, it was to a considerable extent true that the great mass of ore, which was 10 or 12 feet wide, did go down in the shape of a wedge for a few feet, but the end of the wedge has not yet been reached, though shafts have been sunk on the lode to a total depth from the top of 25 fathoms. The aptness of the comparison ceased after the first 2 fathoms, for a finer and more regular lode below I never saw. The ore in the lode varies from 2 to 4 ft. in width, the walls are of killas, and the lode of fine gossan and steelite, with splendid grey ore, accompanied by green carbonate and liver-coloured ore. The lode underlies about 1 ft. in the fathom, and has been traced altogether for above two miles in length, occasionally cropping out on the surface. On the property of the Yudanamutana Mining Company the lode runs for a mile, and has been proved at intervals for a length of above 1300 yards. The principle workings are in the neighbourhood of the boll of ore on the hill, where a shaft (No. 2) was sunk at the side of the lode for 11 fms., proving the lode to that depth, the country as well as the lode in the bottom looking very favourable. Several fathoms to the north of this shaft were stopped away from the surface, so that the nature of the lode could be plainly seen. Some stoping has also been done on the south side of the hill with a similar result; and a very promising camber lode to the east of the main lode was opened for a length of between 20 and 30 feet, and a few feet in depth. At the bottom of the hill on the south an adit level (No. 1) was being driven on the course of the lode; from the mouth of this level the lode is before referred to were sunk 3 fathoms at the entrance to the level, and the appearances presented in it were highly satisfactory, the finest possible country with beautiful ore in the bottom. A little further south, and across a small flat, 70 fathoms from No. 2 shaft, we find No. 1 shaft sunk 12 fathoms on the same lode, and in every respect looking as well as the other, several fine stones of grey ore of about 1/4 ton weight, and from 40 to 50 per cent. produce, were raised from the bottom in my presence.

On section "135a," to the south of that which I have described, workings were commenced about 300 yards from No. 2 shaft, and several tons of red oxide and steel-grey ore raised. At this spot there is a curious volcano-looking boll of ironstone, which appears very much like lava and scoria. This boll was hollow internally, so that while one of the miners was working here with a pick, a mass suddenly fell inwards into the cavity, nearly causing him to fall with it. A short distance to the eastward a branch lode has been cut, apparently converging with the other at an acute angle towards a point in the gully to the north, and about this point a cross-course from the west seems to be intersecting the main lode. If this should prove to be the case, a large deposit of ore may be looked for at the point of junction. I have now described the extent of the workings at the time of my visit, but I have inspected the adjoining mineral sections belonging to the company, and on all of which copper is found. Two of these (Nos. 285 and 1398) appear to be better than the other, and I am glad to learn that operations have been commenced on 285, called the Martichudina, and very encouraging results met with. On one part of this section there are large masses of rock containing copper ore in abundance; and in another place stones of the size of road metal are scattered thickly up the slope of the hill for a width of 15 or 20 feet, and nearly half of them contain copper ore, many of them to the value of 40 per cent. A similar surface deposit occurs on section 1398, though, perhaps, not quite so rich as on 285.

WHEEL BLINMAN.—A mine belonging to the Yudanamutana Mining Company. There is a large reef of indurated clay-slate, intermixed with ironstone and gossan, and forming the back of a lode running nearly north and south, and distinctly traceable for about 300 yards on the surface. In the clay-slate small pieces of green carbonate and grey ore are found. The lode runs to the top of a hill, about 90 feet in height from the creek, and here it forms a large boll, in which the ore was discovered. On the rocks being broken away a fine lode of exceedingly rich ore was exposed, and underlying westwards into the hill about 18 in. in the fathom. When I visited the mine the top of the hill was being stopped away, and a splendid course of ore was exposed to view. It was nearly solid metal for a width of 8 ft., and had a peculiarly brilliant appearance, like a mixture of grey and red oxides. Some rich green and blue carbonates were occasionally met with, and specks of the finest yellow ore, known as "semi-metal." At the time of my visit No. 1 shaft was sunk 9 fms. on the course of the lode from the top of the hill, and carried ore the whole way down. No. 2 shaft is about 8 fms. south of No. 1, being further in the range, first shaft commencing very near the face of the hill the same lode has been cut in this shaft, where it is from 8 to 10 ft. wide, and the shaft sunk about 5 fms. on the lode; the ore raised is of similar quality to that in the other shaft, and the quantity raised is about 100 tons of first and second quality, and 150 tons to be smelted. About 18 fms. farther south No. 3 workings are going on, and which, at about 2 fms. below the surface, have produced 5 tons of the finest ore, and about 10 tons for smelting. About 10 fms. still farther south, on the same lode, a shaft has been sunk 4 fms., from which about 5 tons of second quality ore have been raised, and a few tons have also been reduced to regulus. About 20 fms. north of No. 1 shaft another shaft (No. 4) has been sunk 4 fms. through a good gossan lode containing ore of first and second quality. Fifty tons of ore of similar qualities have been raised from this shaft, and 30 fms. farther north No. 4 shaft is sunk to a depth of 10 fms. through a good ore-bearing lode from 3 to 4 ft. wide. At the depth of 8 fms. the lode inclines farther west, and a drive is being carried to intersect it, and when it is cut again drives will be carried both north and south, on the course of the lode, under the various workings above-mentioned. Up to the close of 1862 above 600 tons of ore of all qualities were raised here, 400 of which were estimated to yield an average produce of 40 per cent. A fine block of this value, and weighing about 2 1/2 tons, had been sent to Port Augusta for shipment. The country was very dry, a well having been sunk 20 fms. in the bed of the creek without cutting water. There are, nevertheless, some fine springs in the immediate neighbourhood. A number of substantial pine huts for the miners have been erected on the mine, besides a good store of galvanised iron with a cellar beneath, also offices and captains' apartments.

Our author notices more than 60 mines of copper and silver-lead in the North. For the present, we are admonished by our limited space to let Mr. Austin speak of the northern mines collectively. The discoveries in the North are known to include mines of great promise. Let us see what has been produced by them, in spite of distance and the manifold difficulties attendant upon mining enterprise in regions remote from the emporia of trade and commerce.—Up to the close of 1862 above 600 tons of ore, of all qualities, were raised at Wheel Blinman, 400 of which were estimated to yield an average produce of 40 per cent. At Mount Rose, although the best of the ore raised had been carried away to the amount of nearly 100 tons, several tons remaining at grass

would quite pay for dressing. The total quantity of ore raised at Blinman and Yudanamutana together is estimated at 2400 tons, and all this has been accomplished by less than 80 men and boys, in little more than seven months, besides much preliminary work.

Meetings of Mining Companies.

WEST PAR MINING COMPANY.

A general meeting of shareholders was held at the company's offices, 117, Bishopsgate-street Within, on Wednesday, Mr. J. H. MURCHISON in the chair.

The notice convening the meeting was read, and the minutes of the last were confirmed. The accounts for the six months showed—

Balance last audit	£ 75 0 0
Calls received	855 10 6
Tin sold	343 18 10
Copper ore sold	39 15 8
Old materials sold	5 1 6
Discounts	0 6 6 = £1320 10 7
Costs and merchants' bills	£1327 3 7
Dues	9 7 6
Office rent and salaries	27 4 3
Printing, stationery, and sundries	14 10 4
Discount on calls	25 2 5 = 1313 7 1
Balance (credit)	£ 7 3 6

The liabilities exceeded the assets by 1928l. 5s. 6d.

The report of the agent was read, as follows:—

May 23.—Since the last general meeting we have fixed 160 fms. of flat and shaft-roads at surface and underground, cut 600-plata, fixed two angle-bols, and commenced to sink Dawkes's shaft below the 65, the lode in fixed by a horse of killas, the north part being 1 1/2 ft. wide, producing tin; the south part is 6 in. wide, also producing tin, but not sufficient to value; by the underlie of these branches they are likely to come together in 6 or 8 ft. below, where I anticipate a larger lode, as about 3 fms. east, where they come together, the lode is from 5 to 6 ft. wide, having yielded a large quantity of tin at this point. The backs are worked through to the 55. The 65 end has been driven east 10 fms. 3 ft. 6 in., through a very promising lode, averaging 2 1/2 ft. wide; 4 fms. of this drive yielded 3 cwt. of tin to the 100 sacks, or worth 10l. per fm., the remainder saving work for the cwt. The lode in the present end is 1 1/2 foot wide, producing good stones of tin, and looking kindly for further improvement. We have driven the 30 end east 14 fms. 2 ft., the lode averaging 2 ft. wide, producing good work for tin in places; driven west at the same level 1 fm. 5 ft.; the lode here is 3 ft. wide, composed of chlorites and spar, producing saving work for tin, and still improving as we near the cross-course, to the east of which the ground is standing whole; to the west, above the 45, nearly the whole of the lode has been taken away, close up to the bottom of this level, and a quantity of tin raised. We have also raised in the back of the 45, east of Dawkes's shaft, between the 30 and 11 fathoms, the lode averaging 2 feet wide, and producing 1 1/2 cwt. of tin to the 100 sacks. This piece of ground has not turned out according to the expectations of either the investors or myself, but I am of the opinion of having bunched tin about this level, there being a large quantity of unexplored ground east and west above the 30. We have three tribute pitches, working by seven men, in the backs of the 55 and 45 fms. levels, at 13s. 4d. in lb., the work broken from them averaging 1 1/2 cwt. of tin to the 100 sacks. The numerous breakages which we had in the machinery during the last three or four months greatly retarded our progress in all operations throughout the mine. The season being very wet, we were obliged to drive the engine faster than usual, in order to keep the water, when the main rod parted in the shaft, allowing the water to rise above the bottom plunger-clacks, and before we could fork again, the clacks failed, then we were compelled to drop a side-lift of pumps, in order to fork the water, but we could not drain so fast with this drawing-lift as with the plunger. After this we had a series of breakages; the sweep-rod of the engine broke, causing also the shaft of the fly-wheel to snap asunder, and altogether throwing us back with the work fully two months. If things had gone on right, I have no doubt Dawkes's shaft would have been sunk 4 fms. by this time, and the sales of tin would have been larger. All the machinery is now in thorough repair, and made stronger than it has been for years, so that I do not anticipate any further trouble with it. Everything is in readiness for sinking, and the engine is working well. We shall go on raising some tin (say) about 1 ton per month, with the present number of hands and prospects, and at the same time proving the high ground; but our main object is to push down Dawkes's shaft with all possible speed. We have a large regular lode nearly all the length of the 65 (120 fathoms), and tin making below the level, both east and west of shaft, in places; it is also a kindly-looking lode, and congenial for the production of tin; I have a very favourable opinion of it, as there is every indication of the lode becoming much more productive.—W. WOOLLOCK.

Capt. WOOLLOCK, in explaining the position and prospects of the mine, stated that an improvement of an important character had taken place in the bottom level since the last meeting. In the back of the 65 the lode was now worth 10l. per fm.; at that point the lode was never "to value" before. He computed that an improvement in the lode would be in the shaft in about 6 or 8 feet below the present depth. It was but natural to expect, when these bunches of ore came together, that some important results would be realised.

Mr. F. COMBS reminded the meeting that the recent advance in the price of tin (4l. per ton), was an important feature in connection with their undertaking.

The CHAIRMAN enquired of Capt. Woollock when the shareholders might look forward for some important improvement?—Capt. WOOLLOCK said as soon as the branches came together in the shaft.

Mr. COMBS enquired if the reaching of the cross-course was not considered a point of importance?—Capt. WOOLLOCK replied that they were driving towards the cross-course in the 30, and there was reason to hope an improvement would soon be met with in that direction, as cross-courses generally made ore.

The CHAIRMAN, in answer to a question, stated that West Par had sold from above the 55 about 9500l. worth of ore, of which 7360l. was for tin, and the remainder for copper ore. He might remind the meeting that Capt. Puckey (of Par Console) stated the poorest level in that mine was the 60, but the 70 and 80 were the richest. That mine, which adjoined West Par, and on same lodes, had divided about 300,000l. in profits. In West Par there had been two good levels—the 45 and 55—the ore from which had realised 9500l. It was true the 65 was not so good, although apparently fresh bunches of tin were coming in; the inference, therefore, was, but a natural one, that as the depth of the shaft was increased the same successful results would be realised as already had been in the case of other mines, in the contiguous mine, Par Console.

Mr. RONALDSON enquired what would be the perpendicular depth from surface of the 75 fm. level?—Capt. WOOLLOCK replied, 55 fathoms.

A SHAREHOLDER enquired if all the levels were being driven towards the cross-course?

Capt. WOOLLOCK replied, that three of the levels were being driven in that direction. He saw no reason why they should not have the same results above the cross-course in the east ground as they already had under the cross-course.

The CHAIRMAN said that the east ground in West Par was the only piece of untried ground in that district.

Capt. WOOLLOCK, in answer to a question, stated that the monthly cost had been about 1500l. for the merchants' bills 60l. or 70l., but there would now be a considerable saving in coals. He confidently expected that a discovery would be made in sinking the shaft another 15 fms.; that was not only his opinion, but it was that of every practical authority who had inspected the mine. He did not know of a finer piece of mineral ground in Cornwall, surrounded, also, by mines that had been very rich.

Mr. COMBS enquired what time it would occupy in sinking the shaft that depth? Capt. WOOLLOCK replied seven or eight months.

The accounts were passed and allowed. A call of 1s. 6d. per share was made. A resolution was passed to the effect that notice be given to the shareholders in arrears of more than one call that unless the amount be paid in ten days proceedings be taken in the Stannaries Court, or their names handed over to the merchants.

It was unanimously agreed that an application should be made to Major Carlyon, urging him to suspend the dues, at all events, temporarily; and that Messrs. R. Richardson, J. D. Ronaldson, W. Jardine, and J. H. Murchison, form a deputation to wait on him with that object.

A vote of thanks to the Chairman was passed, which terminated the proceedings.

EAST WHEEL RUSSELL MINING COMPANY.

A general meeting of shareholders was held at the company's offices, Bishopsgate-street, on Thursday.—Mr. JOSEPH PROCTER in the chair.

Mr. J. H. MURCHISON (the secretary) read the notice convening the meeting, and the minutes of the previous one, when the report of Capt. Richards and Goldsworthy, and the statements of accounts, were submitted. The cash account showed:—

Balance last audit	£ 158 7 9
Calls received	446 7 6
Ore bills	2384 0 9
Carriage and sundries	77 17 3 = £2666 13 3
Mine cost and sundries	£422 7 3

May 26.—We beg to hand you our report, which we have prepared for the meeting appointed to be held on Thursday next, May 28, showing the work accomplished during the past three months, and the results obtained therefrom. Homersham's shaft has been sunk 2 fms. 5 ft., making a total of 7 fathoms below the 120, to the south of the lode, in ground favourable for progress.—Homersham's Shaft: Maynard's cross-cut, in the 120, has been extended north 6 ft., and the north part intersected at the date of the last meeting has been cut through, and proves to be 8 ft. wide, composed of capel, mudiic, peach, quartz, iron, red and black oxide, green carbonate, and green carbonate of copper. The cross-cut is being continued in search of the north part of the lode seen in the 110 above, but the ground being hard the progress is slow. The 120 has been driven east of Maynard's cross-cut 2 fathoms, and for the first 6 ft. the lode yielded 1 ton of ore per fathom. The lode in the present end, or the part thereof being carried (4 ft. wide), consists of capel, quartz, mudiic, iron, and a little red oxide of copper. The 120 has been driven west of Maynard's cross-cut 2 fathoms, and the part of the lode carried (4 ft. wide), is composed of quartz, gossan, capel, mudiic, iron, prlan, and occasionally a little ore. Vigor's cross-cut, in the 120 east, has been driven north 5 fms. 3 ft., in which the main ore-bearing part of the lode is intersected and carried through and proved to be 3 1/2 ft. wide, consisting of peach, mudiic, quartz, capel, prlan, and a small branch of black oxide of copper, and is promising. The cross-cut will be continued in search of other portions of the lode, and as soon as it is advanced another 6 or 8 ft., drivings will be commenced on that part of the lode which has just been passed through. The 110 east has been driven west of Fawin's cross-cut, on the north, or gossan part of the lode, 7 fathoms, and the lode on to within 6 ft. of the present end is composed of fine gossan, mudiic, quartz, prlan, and a small proportion of black oxide of copper; in the last 6 ft. driving it is composed of less gossan, with more iron and capel. In John's stope the lode during the past three months has fallen off in value, from 20l. to 4l. per fathom; it is, however, again improved, its present value being 10l. per fm. The lode in the new or George's stope, in back of the 10 east, and east of Hockridge's rise, is worth 10l. per fm. Mollard's cross-cut, at the 88 fathom level east, has been driven north 1 fm. 5 ft. 10 in., and has reached the north wall of the lode, on which the 88 fm. level is driven west 1 1/2 ft.; the part of the lode carried is 4 ft. wide, yielding good stones of yellow and grey sulphuret of copper, and promising improvement. Jenkins's winze, below the 66 fathom level, on the north part of the lode, east of Collins's cross-cut, has been sunk 5 fms. 5 ft., or a total of 7 fms. 3 ft. For the first 2 fms. the lode proved worth 20l. per fathom; from this to the deepest point reached it is 4 feet wide, composed of capel, quartz, and

iron, and is suspended. The 66 fm. level east has been driven west of junction, on the north part of the lode, 5 fms., and is communicated with the 66 fm. level, east of Collins's cross-cut, on the north part of the lode, the lode yielding some saving work. From a point about 3 fms. east of Collins's cross-cut, a portion of the lode was found to take a northerly direction, on which the 66 fm. level has been extended east 4 fms., the lode varying from 3 feet and 2 feet to 1 foot wide, and yielding for the first 2 fms. 10l. worth of ore per fathom. From this point and in the present end it yields a little ore. The 66 fm. level east has been extended 2 fms. 4 ft. 6 in. by the side of the lode, and about 5 fms. behind the present end a cross-cut has been driven north, proving the lode to be 7 feet wide, composed of capel, mudiic, and quartz. In the back of this level a rise (Harvey's) has been put up 8 fms. on the south part of the lode; the lode, or the part of the lode carried, yielding occasionally a little ore. The 45 fm. level east has been extended 9 fms. 4 ft. on the north part of the lode, the part being carried 3 1/2 ft. wide, composed of peach, capel, carbonate of iron, and at one point yielding fine stones of ore. About 9 fms. behind the present end the lode has been cut through by means of a cross-cut north, the lode proving of great width, 12 ft. wide, composed of peach, capel, quartz, and floukan. A rise (Truscott's) has been put up in the back of the 45 fm. level east 2 fms. 1 ft., in which the lode yielded a little ore; this rise is suspended for want of air, but immediately upon boring the rise in the back of the 66 with this level, which will be accomplished in about five weeks from this time, it will be resumed for proof of the lode up towards the gossan. Williams's cross-cut at the 88 fm. level, west of Hockridge's engine-shaft, has been driven north 5 fms. 1 ft., and has passed through the north part of the lode, in which a small proportion of ore was found. The cross-cut is continued with a view of intersecting the north lode. The different points of operation mentioned in this report—namely, the sinking of Homersham's shaft, the driving of the different levels, &c.—will be continued, and the lode, as it is intersected in various places by the cross-cuts, will be laid open by means of drivages, winzes, and rises in the usual way; and, looking at the general appearance of the mine, we believe that these explorations will be attended with beneficial results. We calculate upon sampling, at the usual time, about 180 tons of ore.—J. RICHARDS, J. GOLDSWORTHY.

The CHAIRMAN said that as both Capt. Richards and Goldsworthy were present they would be glad to answer any questions which the shareholders might have to ask.

Mr. ROSEWARNE enquired whether the north lode at the 110 had yet been cut in the 120? Capt. RICHARDS was afraid that it had, although it might be found that they were not yet up to it.

Mr. ROSEWARNE thought that there was much to complain of in the cross-cut having been discontinued before the lode was driven through. He would ask Capt. Richards if it was usual to turn the driving, and drive upon one portion of the lode before the main part was driven through? He had consulted several competent agents upon the subject, and they agreed with him that it was quite unusual.

Capt. RICHARDS said that if the agents who had expressed that opinion had examined the mine they would agree with him that he had done what should have been done. He himself felt sure that it was the ore-bearing portion of the lode that they had commenced driving upon, and it should be recollected that the lode was only driven upon to get out of the way, and then the cross-cut was proceeded with as before. They were in hopes that they had not yet cut the main portion of the lode, but this the cross-cut would prove. He could assure the shareholders that he had done his best according to his judgment, and thought that they could not expect any man to do more.

Upon the proposition of Mr. ROSEWARNE, Capt. G. Rowe was nominated to inspect and report upon the mine and its prospects, and upon the mode of management generally; and Capt. Richards, obeying that as Capt. Rowe had already given an adverse judgment in the matter, it would be unfair to send him, it was ultimately agreed that he should be accompanied by Capt. Chas. Thomas, of Dolcoath.

Mr. ROSEWARNE complained that unnecessary expenditure was being incurred in opening up the mine, owing to full pairs of men not being kept in the ends. He observed that the salaries and agencies were the same under all circumstances, yet many important ends were working with four men instead of six, which would be required to work the three shifts.

Capt. RICHARDS had found in practice that four men did actually more work than six taking a twelvemonth's work, as the air was kept better. If they were only 10 fms. beyond a winze six men would take all the air.

Mr. ROSEWARNE had worked in a mine since Capt. Richards had, and the four-men system was new to him. When he was working under Capt. Richards, at Devon Great Consols, they had no four-men pairs. He admitted that four men were better for the men, but not for the employers. He would stake 100l. that he would remove more ground with six men than with four. He considered working with four men in a pair was extravagant, and he believed that generally the mine was extravagantly managed.

Capt. RICHARDS entertained a different opinion.

The adoption of the report, and the resolution for the inspection by Captains Thomas and Rowe, were then agreed to.

Mr. ROSEWARNE then proposed that the services of Capt. Richards be dispensed with. He had no personal feeling against Capt. Richards, nor did he question his ability, but he thought that one captain was sufficient for East Wheel Russell, and if Capt. Goldsworthy was not equal to the mine, they must find another agent.

Upon the suggestion of Mr. PROCTER, the consideration of this question was adjourned until after the reports of Captains Thomas and Rowe should be before the shareholders, Mr. ROSEWARNE withdrawing the proposition.

The CHAIRMAN said that the next question was the accounts. The expenditure during the quarter had been 2306l. 6s., and the returns 1368l., leaving a loss of 970l. upon the three months.

Mr. ROSEWARNE enquired whether there were any places in the mine that could be suspended, with a view to the reduction of cost? He would like to know at what points they were expecting improvements.

Capt. RICHARDS said that there were no places that ought to be stopped. They were searching for discoveries. There were many points in the mine where the appearances were very encouraging. He considered the general prospects to be good.

Mr. ROSEWARNE observed that they had a captain dresser at 5l. 5s. per month, and enquired whether Capt. Goldsworthy's general supervision was not sufficient with regard to the dressing?

Capt. GOLDSWORTHY could not attend to the underground work and the dressing too. Poor ores always required more attention than rich, and the fact was that their ore was of that peculiar character that unless it is dressed with great care and attention they would lose it altogether. It was not like yellow ore; theirs was blue and green carbonates, and, indeed, ore of all sorts and colours.

The adoption of the accounts was then unanimously agreed to.

Mr. ROSEWARNE proposed that as there were many rumours afloat as to the agents dealing in shares before the reports which influenced prices were made, the inspection of the mine by private agents should be limited to one day per week, but that it should be made far into it. The western ground has shown one continual deposit of tin from the 12 to the 110 fm. level, varying the entire length from some 8 fms. at the 12 to nearly 30 fms. at the 110, with an unproductive part of 5 fms. in length just in the centre of the length of tin ground at the 110. The 122 is driven quite through the length of the first part of the 110 deposit, but not through the latter part by several fathoms. There is, however, at the 122 a considerable falling off in the value of the first, or eastern, part—the western part is not yet proved. The deposit of tin has been throughout the entire depth some 20 fms. west of the engine-shaft; hence the time and cost required to sink the engine-shaft, and drive 20 fms. in poor ground at every succeeding level in depth, have been so great for only 20 to 25 fms. in length of tin ground to work upon, that almost constant calls have been required. The shaft was, doubtless, continued in that line with the hope of the tin lengthening towards it in depth; that having not been the case, the agents have commenced forming another shaft, for sinking below the 122, just in the heart of the general run of the tin deposit, of which, under the circumstances, he highly approves, this being the direct, cheapest, and quickest mode of following down in the run of the productive ground; and also being 30 fms. nearer the new addition to your set, this shaft can be made available for proving the deeper levels in that part much sooner than could be by sinking the present engine-shaft. Besides, the new shaft will be a great improvement on the old one for drawing the ore. The trunk of the 80 fm. level into the new addition to your set shows indications of improvement in that direction, and the north and south lodes, which will shortly be cut into, will supply further means for forming an opinion of their value. On taking a full view of the mine, of its capabilities and circumstances, he thought it was being worked judiciously, and on the best plan that can be; he would remark, however, that, where the ground is hard, if two men, or a man and a boy, were to work at the same time, instead of one man only as at present, the ground could be explored faster, thereby laying open for tribute a larger quantity of tin ground monthly, making the same tin much more valuable to the owners. There are, therefore, an established and a new method, quick mining is good mining, although it may be a little more costly per fathom for driving and sinking.

The joint report of Mr. James Hollow and Capt. W. Wasley, after referring to the various points of operation, stated that there were 8 network bargains, working by 28 men and 6 boys; 6 tribute pitches by 15 men—average tribute, 13s. 4d. in lb.; total employed underground, 43 men and 6 boys; on surface, 18 men, 14 boys, and 20 girls—in all, 101 persons working on the mine. For future operations, they recommended driving the 70, 90, and 100 fm. level, to prove the run of tin driven through in the 80 fm. level, and to push on the new shaft below the 122 in deeper ground. On the whole, the prospects were a little more favourable than last quarter.

Mr. PHILLIPS enquired if all the costs and merchants' bills had been charged up?—Mr. THOMAS HOLLOW replied that everything had been charged up—not a bill was left.

Rev. J. D. HASTINGS said that at the last meeting a resolution was passed to the effect that all the merchant's bills were to be vouched by the captain. He would like the liberty of enquiring whether that had been done?—Mr. THOMAS HOLLOW replied that every bill had been vouched by the captain, and bore his signature.

Mr. HASTINGS was glad to hear that such had been the case. He thought the report of Capt. Charles Thomas was, upon the whole, of a favourable character.

Mr. THOMAS HOLLOW, in answer to a question, stated that the engine was quite equal to take the mine down to a depth of 200 fathoms. The water there was very light. The reports were then received and adopted, and the accounts passed and allowed.

It was then unanimously agreed

9s. 11½d. per share; and for the further prosecution of the mine a call of 10s. 0¼d. per share was made, making 20s. per share.

Mr. HASTINGS said it was suggested at the last meeting that a committee of finance should be appointed; but it was then agreed to defer the matter till the present occasion. He wished now to know whether it was proposed such a committee should be appointed.

The CHAIRMAN said the question seemed to lie between the additional expense and the benefit to be derived. It appeared to him that all that was wanted was a discovery of ore.

Mr. THOMAS HOLLOW said the accounts were duly vouched by the agent; and Capt. Charles Thomas, the greatest authority in Cornwall, had personally inspected the property, and had borne his testimony to the fact that the mine could not be developed in a more miser-like or judicious manner. Under these circumstances, he (Mr. Hollow) would ask what was there left for a committee to do, except increase the expenditure?

The CHAIRMAN did not think the question had better be deferred till another meeting, and thought the consideration that periodical reports did not appear in the Journal.

Mr. PHILLIPS said it was very desirable that reports should appear in the Journal, it being the only means by which shareholders at a distance could know what progress was being made.

Mr. THOMAS HOLLOW said there could be no possible objection to the reports being periodically sent to the Journal. He would make arrangements that bi-weekly reports should be sent. A vote of thanks to the Chairman was then passed, which concluded the proceedings.

DRAKE WALLS MINING COMPANY.

A general meeting of shareholders was held at the company's offices, Winchester-buildings, on Tuesday.—Mr. W. BETTELEY in the chair.

The notice convening the meeting, and the minutes of the previous one having been read, the reports of the agents and the statement of accounts, of which the subjoined is an abstract, were read:—

Balance last audit £ 546 17 5

Tin ores sold 4460 15 4

Arsenic and tungstate of soda sold 125 11 0 = £5133 3 9

Mine cost, merchants' bills and sundries 3811 2 9

Leaving credit balance £1322 1 0

Drake Walls Mine, May 23.—We beg to forward you the following report of this mine: The branches in the 102, east of Matthew's shaft, are worth 8s. per fm., and are very promising. We have sixteen men stopping in back of this level in tin ground worth 8s. per fm. The branches in the 92 east are worth 5s. per fm. The stope below the Tye level east is worth 7s. per fm.—Betteley's Shaft: We have resumed the drive of the 102, west of Betteley's shaft, the branches in which are producing occasional stones of tin.—Machine Shaft: Since last meeting we have cleared up this shaft, put in new stulls against the old workings, made all secure, and commenced to stope below the 70, in tin ground worth 12s. per fm. As we extend west the tin ground appears to be more productive. We have an extensive run of tin ground laid open east and west of this shaft. The branches in the 60, west of Betteley's shaft, are worth 13s. per fm. We expect to intersect the western, or new cross-course, in this level shortly; at or about the intersection we expect an improvement. There are ten men stopping below this level, in tin ground worth 9s. per fathom. In the 50, west of Betteley's shaft, we have intersected a cross-course not seen in the mine before, to west of which the ground appears to have changed for the better, and the branches are worth 15s. per fm. This cross-course is a new feature in the mine, and seems to have had a favourable effect on the ground. There are six men stopping below this level in tin ground worth 10s. per fm. In the 40, level west we have intersected the cross-course referred to above; the branches in this end have improved, and in taking down the north part to-day we find them worth 20s. per fm. There are sixteen men stopping in back of this level in good tin ground. The 30 west is yet some 10 fms. behind the improvement in the 40. The branches in the 30 are worth 8s. per fm. for the part being carried; the remainder will be taken down in stope. The stope in the 20, west of Betteley's shaft, is worth 9s. per fm. The stope in the 10, west of Betteley's shaft, is worth 12s. per fm. We have not as yet intersected the copper lode in the cross-cut north, although every effort has been made to do so; and the men have worked well, but we have had some troublesome floors of capel to contend with. Between this and the former cross-cut we have a cross-course; this, very probably, has had some effect on the bearing of the lode, which may account for the distance being greater than we expected. Although the samplings during the quarter have not been quite equal to our expectations, the profits have exceeded our anticipations. The deficiency in the samplings does not arise from any falling off in the mine, but from the fact that it took more time to clear up machine-shaft than we expected, and put in new stulls, &c.; this prevented our tramming for some weeks through the 70 and 80; and, secondly, the surface water has been so scarce for a long time past that we have 20 heads of stamps idle for want of water, which we cannot possibly avoid; consequently our stock of broken tinstuff is increasing underground. It is very satisfactory to inform you the western end of the mine continues to open up good productive tin ground, particularly in the 40 and 50 fms. levels, west of the new cross-course, which presents a new feature in the mine, and we have great confidence that it will be attended with very satisfactory results, particularly with a further advance in tin ore. The quantity of tinstuff drawn for the quarter ending 31st March amounts to 15,172 wagon loads and tubs. There are 403 persons employed in and on the mine.—THOS. GREGORY, J. HOSKIN.

Mr. HOSKIN said he had found fault with the manner in which the committee attended to their duties. They had five committees, and, on referring to the attendance book, he found that seldom more than two, sometimes only one, had signed the book. The committee were paid for their services, and all he asked for was the presence of those who were paid to be present. Having heard the accounts read, he would move that a dividend of 1s. 6d. per share be declared, payable on and after July 12.

Mr. SCHOFIELD suggested that the declaration of the dividend should be deferred until the next meeting. The cash balance in hand was insufficient to pay the amount proposed even in July, and he understood that they had not nearly earned the 1s. 6d. per share during the quarter.

The CHAIRMAN said that a 1s. 6d. dividend would require 9000l., and their cash balance was 9450l. The profit upon the three months' working was 7450l., out of which he should have proposed a 1s. dividend, which would leave them nearly 1000l. in hand.

Mr. SCHOFIELD thought that as it was customary in cost-book companies for the dividends to be payable immediately upon being made (indeed, in Cornwall the purser frequently handed the cheques to the shareholders present before the meeting separated) it would be better to let the present meeting pass without a dividend at all than to declare what they had not yet got, and make the dividend payable six weeks hence.

Mr. HOSKIN considered that by deferring the dividend they would be destroying their property. They had only one bill which could be cashed, and that was for 1500l. Mr. E. BETTELEY said that the whole of the money now in hand would be consumed for the next pay, and thought that 1s. per share was quite as much as they should divide. Even this showed the mine to be in an excellent condition, for they could pay a 1s. dividend out of three months' working instead of 1s. 6d. out of six months.

Mr. HOSKIN contended that they had 1380l. available assets, and that all he asked was that 9000l. of that be given to the shareholders as dividend.

Mr. GILL had no doubt that it would be better policy not to reduce the dividend, but thought that error was in having divided more than 1s. per share at the last meeting. He would, however, be in favour of the 1s. 6d. dividend, seeing that the mine was looking better than it had ever looked, and that the slight difference of 15s. between the cash in hand and the amount which would be required for the dividend would be more than compensated before the next meeting. Perhaps Mr. Betteley would tell them the probable amount of the next sampling and next cost?

Mr. EDWARD BETTELEY said that the next sampling would be about 18000l., and they would require about 9000l. for the next pay.

Mr. BALSTER said that that showed that the next pay would take all their present cash balance, and that it would be better to declare only 1s. dividend, or none at all. They were now obliged to discount all their bills.

Mr. HOSKIN thought they ought to be so. He would ask whether any commercial man thought of keeping his bills until they came to maturity?

Mr. GILL considered that the satisfactory state of the mine would justify the division of 1s. 6d. If the mine were retrograding, he would say make no dividend at all, but precisely the reverse was the case.

Mr. BALSTER said that he proposed at the last meeting that the dividend should be only 1s. per share, and he thought it would have been much better for the mine if his proposition had been carried, as they all knew that when money was in hand better bargains could frequently be made.

Mr. SCHOFIELD said that the present balance was only 13000l., instead of 15000l., as it was at the last meeting, and the dividend was to be made payable long after being declared to meet the difficulty. He maintained that people do not like to have dividends payable six weeks after being declared. With respect to the last dividend the fact was that there were several thousand shares upon the market, and the dividend was made to suit the operations or certain dealers.

Mr. HOSKIN was in the chair at the meeting at which the dividend to which Mr. Sch. alluded, and could assure him that he was not an abettor of any such course, and was not aware of its existence.

Mr. SCHOFIELD said that it could not be denied that the last dividend was declared without money in hand, and it was now proposed to do the same thing again. However, the question was whether they were to have a 1s. or a 1s. 6d. dividend.

Mr. E. BETTELEY remarked that they were taking away all the money from the mine, and in a short time they would have none to go on with.

It was ultimately resolved that a dividend of 1s. 6d. per share be declared, and that it be made payable on and after June 15.

The meeting was then made special, for the purpose of resolving, or otherwise, on the expediency of working the West Drake Walls sett as a separate adventure, and to transact any incidental business.

Mr. EDWARD BETTELEY read the subjoined report upon the position and prospects of the portion of the sett which was proposed to separate from Drake Walls proper:—

West Drake Walls, May 25.—In exploring this sett we have discovered some good branches of tin ore, and in order to prove the nature and value of the same, we have commenced to open by way of trial on them, but as yet they are not sufficiently laid open to speak of their value. We have also intersected a copper lode of great promise, samples of which we have forwarded to the office for your examination; we shall now drive east on the course of this lode to prove its underlie, bearing, &c., while the north part of the sett is being more fully explored in search of other lodes said to be near our present workings. I would advise an efficient and proper trial of shodding throughout the sett before deciding on any particular point for erection of any machinery, probably this will occupy two months. Looking at the improvement in the western end at Drake Walls, west of the cross-course, and all in new ground, we believe West Drake Walls to be a very valuable piece of mineral ground, which presents every prospect of ultimate success.—THOMAS GREGORY, JAMES HOSKIN.

Mr. GILL remarked that the sett which it was now proposed to work as a separate adventure originally belonged to the Drake Walls adventurers, but as local parties continually applied for it when they ceased to work, it was ultimately revoked by the Duchy, and granted to another party of adventurers, who worked it for some time on their own account. Upon their abandoning it, the company applied for the sett, and got it. He did not think it a wise measure to divide the sett until they had made some further trials.

Mr. SCHOFIELD considered, on the contrary, that it was highly desirable that the Drake Walls proper and the West Drake Walls should be worked as separate adventures, as (it being proposed that the shares in West Drake Walls should be allotted *pro rata* to the present holders of Drake Walls shares) no one's interest would be affected. Those who desired to test the western portion of the sett would have the opportunity of doing so at the same cost which would be incurred if they continued to do so, whilst those who did not wish to go on with the western sett would not have their dividends taken to pay for works which they did not concur in being carried on.

Mr. HOSKIN said they had a copper lode in Drake Walls proper, which should be proved, and if they had any funds to dispose of beyond those required for their present operations he thought they should apply it to the copper lode, and let a fresh set of adventurers work the western sett.

Mr. GILL remarked that the most profitable portion of the present sett was towards the west, and yet it was that part which they proposed to get rid of.

Mr. E. BETTELEY did not consider it getting rid of it; it was practically only separat-

ing the accounts. In Drake Walls proper, moreover, it was over 150 fms. from their present working to their western boundary, which was more than sufficient for them during the present lease.

It was finally resolved to divide the sett, and that the secretary should write letters with a view of ascertaining from the shareholders who were willing to take their *pro rata* shares and who otherwise. Thanks were then voted to the Chairman, and the meeting separated.

WHEAL HARRIETT MINING COMPANY.

A general meeting of proprietors was held at the company's offices, Austinfriars, on Tuesday.—Mr. B. ALEXANDER in the chair.

Mr. EDWARD KING (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. The accounts for the four months, ending with costs for March, showed:—

Tin and copper sold £3854 17 5

Balance last audit £ 307 12 3

Jan. mine cost, merchants' bills, &c. 419 16 3

Feb. ditto 418 4 3

March ditto 409 11 7

Dues 119 13 0

Testimonial to Capt. Williams 26 5 0 = 1782 2 6

Leaving credit balance £2072 14 11

The report of the agent was read, as follows:—

May 23.—Since the general meeting, in January last, the engine-shaft has been sunk 4 fms. below the 130; cut trip-plat and fixed drawing-lift in this level; lode in shaft unproductive. The 130 has been driven 12 fms., which is now 14 fms. east of shaft; the lode in this driving has produced occasionally stones of tin, not sufficient to value. The 115 has been driven east 5 fms.; in the first 2 fms. the lode is worth 50s. per fm.; the last 3 fathoms driven the lode is unproductive; this end is suspended, and the men driving north towards the north part of the lode, which has gone down to the north of the winze from the 100; 1 expert in a few feet further driving to reach the lode. Below the 115 we are sinking a winze, which is now down 4 fms.; the lode in this sinking has been worth 10s. per fm., which is about the value of the lode in the bottom of the winze. The stope to the west of the east winze, below the 100, is worked by twelve men; in the last four months we have stope 34 fms. of ground, which have produced 30000l. worth of tin, or equal to 88s. per fm.; this stope is now worth 100s. per fm. The stope east from west winze, below the 100, is working by three men; the lode in this stope is 20 feet below the level, where the lode is worth 50s. per fm.; for 6 fms. in length; from appearance of these stopes we shall have a continuance of this bunches of tin from one stope to the other, if so we have several thousand pounds worth of tin to take away from this piece of ground. Alexander's shaft is sunk 4 fms. below the 12, the lode in this shaft is worth for copper ore 10s. per fm.; we have sunk this shaft to the present depth without having water until now. Now we have a little water, and next week we shall fix a 4-inch lift in the 12, and pump this water to the adit level, when we shall commence sinking. The 12 has been driven east of shaft 10 fms.; in this driving the lode has been worth from 8s. to 10s. per fm.; in the present end the lode is producing stones of ore, but not sufficient to value. The adit level has been driven east 9 fms.; the lode in the first 4 fms. is worth 8s. per fm., in the last 5 fathoms the lode is small and unproductive, in the present end the lode is poor. We have twelve men stope above and below the adit; the lode on the west is worth 10s. per fm. The deep adit cross-cut is driven north from Alexander's lode 50 fms.; in this driving we have cut several branches, but nothing from present appearances worth driving on in this level, but in depth they may show better appearances. The different levels we are driving are not looking so encouraging as at the last meeting, but from the ground that is laid open we shall continue to make profits for several months to come, and I hope, before we exhaust our reserves, to meet with some improvements to continue our favourable position. If our stopes continue for the next four months as their appearance is at present, we shall have a profit of 2500l. per month.—S. WILLIAMS.

May 23.—Enclosed is my report of the mine, and what will be done in the next four months, if present prospects continue. To-day we have had a good sale of tin, which realised 2385s. 3s. 3d., and we have, from the appearance of the stopes, several thousand pounds worth of tin to stope to the west of the winze, and there is some tin to the east to stope to come to the mind. I think the meeting will be pleased to find we have done so well; if they are not, I am. I hope it will satisfy Messrs. Watson and Cuell that 14000l. has not cleared up the mine. I have nothing more to write in favour of or against the mine.—S. WILLIAMS.

The CHAIRMAN said in the accounts which had just been submitted the cost of extra pitwork, &c., had been charged; and the section of the mine (hanging upon the wall), made up by Mr. Henderson, showed exactly what ground had been taken away. The committee had been very particular with reference to this matter, so that no one could say that most of the ore ground had been taken away from below the 100 fm. level. With respect to the accounts just read, it might, perhaps, be as well to state that since the prospect of the mine had so much improved the lord had signified his intention of retaining in future the payment of dues, but had consented to take 1-24th; so that the actual financial position of the company at the present time was credit balance of something like 22000l. We had a debit balance at the last meeting of 40l.; but at the present time the balance to the credit of the company had been increased to 20000l. As to the future, it was stated by the agent—in whom could be placed the utmost confidence—that if the shareholders should deem it advisable for him to make 20000l. profit in the current four months, he (Capt. Williams) was prepared to do it.

The SECRETARY said it was, perhaps, necessary for him to make a few remarks upon the subject referred to in the letter from Capt. Williams, which had just been read. It might not be known to the shareholders present that the remarks in that letter referred to a statement contained in one of Messrs. Watson and Cuell's "Circulars," published on May 7. Referring to a report made by Capt. Reynolds, this "Circular" stated:—"The special report to which we referred last week we now publish, and regret to find it (the mine) so poor. Our agent informs us that he values the tin ground at 7000l., and, as 12 men are stopeing it away, it will not last much longer." His (the secretary's) attention having been drawn to this statement, he at once called upon Messrs. Watson and Cuell, when they placed in his hands a letter from Capt. Reynolds, of the same date as his report. In that letter the value of the tinstuff at surface was stated to be 6000l., and, in this, with the whole of the reserves (7000l.), would bring up the total value of tinstuff at surface, together with the reserves, to 13000l. In the face of this unwarrantable statement, there was said, ten days after the date of this letter, tinstuff which realised no less than 2385s. What possible conclusion, he would ask, could proprietors come to with regard to such an inexplicable proceeding? Why, that Capt. Reynolds was altogether ignorant of the value of tinstuff, and incompetent to estimate reserves. If they did not come to that conclusion with respect to Capt. Reynolds, the only alternative was to come to one much less complimentary to him, for no other motive could have prompted such a statement than a desire to damage the property.

Mr. JACKSON had no doubt that such statements as these had caused many proprietors to dispose of their interest at about 1s. per share.

The SECRETARY, in reply to several shareholders, relative to the different points of operations, stated that the section before them showed the ground that had been laid open by the 100 fm. level, the winze sinking to the 115, the 115, and the winze sinking below that level. The 100 had been productive for tin for 25 fms. long, of the average value of from 50s. to 60s. per fathom. The winze had gone through a lode worth 100s. per fathom, 12000l. worth of tinstuff having been sold from this winze. The west stope was only 20 ft. below the 100, and the lode for 6 fms. long was valued by the agent at 50s. per fathom. From the appearance of the stope, the ore ground was likely to dip very much. The stope west of east winze was worth fully 100s. per fathom, and from the ground taken away could be seen the reserves that still remained above the 115; but he wished to call the particular attention of shareholders to the fact that east of the winze not a particle of ground had been touched, because that was an incontrovertible proof that Capt. Williams was perfectly correct in estimating the value of that piece of ground (which had been laid open) at some thousands of pounds. The winze had gone down below the 115, where the lode had been valued at 60s. per fathom; this was an important point, as it might lead to very important results. The permanent value of this mine would soon be settled by the 115 cross-cut, when there was every reason to believe a good lode would be shown there. At the same time, it was not to be forgotten that the north mine was returning 2500l. bi-monthly, from the ground now opening the agent had every reason to believe that this return could be continued.

The CHAIRMAN thought it might appear to some shareholders a very extraordinary fact that the shares in the market had suffered such a considerable decline; but when it was recollected that for some time past the mine had been, as it were, the "butt" of unscrupulous parties, who did not hesitate not only to misrepresent the actual position of the property, but to misstate palpable facts, with an object best known to themselves, the cause of this declension in the market value of the property was at once explained. Singularly enough, a letter had been sent gratuitously to one of his (the Chairman's) friends. This "Circular" (dated April 8) contained a statement to the following effect:—"The views published in this 'Circular' regarding this (Wheal Harriett) mine have been, unhappily, too strictly verified. The tin deposit has failed, not only in depth, but in length, and the stopes are all but worthless. It is even rumoured in the county that it is in contemplation to abandon the tin lode, and to remove the engine to the copper lode; should this prove correct, the effect upon the market value of the shares will be extremely disastrous."

Mr. JACKSON enquired in whose "Circular" that statement had appeared?—The Chairman said that the statement referred to had appeared in a "Circular" published by Mr. Hume.

Mr. McCALLAN said that, as Mr. Hume was present, he had an opportunity of offering any explanation he thought fit.

Mr. HUME said that the rumour referred to in his "Circular" was at that time very currently reported about the market and at Camborne. He had merely published it as a rumour. When Mr. King told him there was no truth whatever in the rumour, he (Mr. Hume) was very sorry that he had been the means of disseminating it.

The CHAIRMAN said it was by such misrepresentations as these that shareholders were induced to dispose of their shares.

Mr. HUME said the report alluded to in his circular was one written by Capt. Jelfe.

Mr. BALSTER said that Messrs. Watson and Cuell could not plead ignorance of the facts, for no longer ago than Friday last he met Mr. Watson, and spoke to him on the subject, but Mr. Watson still persisted in saying that the reserves were worth only 7000l.

The CHAIRMAN said the fact was, several market men had sold a large number of shares which they did not possess, when, of course, their object was to depress the price of the shares in the market, in order that they might be purchased at as low a price as possible.

Mr. SNOW (of the Stock Exchange) said his advice to shareholders was, that they should obtain what information they required from the company's office, and by no means to be influenced by the advice of anyone. The Chairman had told them that many people had sold large numbers of shares which they did not possess, and he (Mr. Snow) was able to fully confirm that statement for at the present time he was receiving 1s. and 1s. 6d. per share for carrying them over.—In other words, that the persons who had sold the shares were unable to get them at the price they had hoped, and, therefore, was unable to deliver them—hence the "croakers."

The CHAIRMAN said there could be no doubt that Wheal Harriett was a fair speculation, and all that shareholders required was to be fairly and honestly dealt with.

The SECRETARY, in answer to a question, stated that he had given Messrs. Watson and Cuell a copy of Capt. Charles Thomas's report—which report fully bore out the views of the agent, Capt. Williams. Therefore, ignorance of facts could not be the plea.

The report was then received and adopted, and the accounts were passed and allowed. A SHAREHOLDER had much pleasure in proposing a special vote of thanks to Captain Williams, for the ability with which he had developed the mine. He was glad to be in a position to say that Capt. Williams never made a statement which was not borne out.

Mr. E. JACKSON had much pleasure in seconding the proposition, which was put and carried unanimously.

The CHAIRMAN then asked the question for consideration was, what was to be done with the balance standing to the credit of the company? They all knew that the mine was looking exceedingly encouraging, and that great expectations were entertained with respect to the results to be realised by the driving of the cross-cut. But still the recommendation of the committee—after having taken everything into consideration—was,

that the balance of upwards of 20000l. should be carried forward to the credit of the next account, the object being to make Wheal Harriett, if possible, a substantial success. Under any circumstances, within the next few weeks great light would be thrown upon its future position.

The SECRETARY said that of the credit balance, 18000l. would not be actually available for nearly two months, inasmuch as the bills would not be due before that time. If the meeting approved the recommendation of the committee to carry over the present balance to the credit of the next account, there would then be an available balance of (say) 30000l., of which 10000l. would be in cash.

It was unanimously agreed to adopt the committee's recommendation.

The CHAIRMAN thought it but right to mention that there was a piece of ground situated between Harriett and Dolcoath which the adventurers in the latter mine had the right of developing, but had up to the present time neglected doing so. The lords having signified their intention to revoke the lease unless the property were worked, the Harriett committee made an application for it. The result was that the Dolcoath adventurers are now going to work it. He mentioned this fact merely to show the favourable position which Wheal Harriett occupied. From what had been said by some people about Wheal Harriett, it would appear that they were determined to induce the uninitiated to believe that there was something new in a lode holding in depth in the Camborne district, while the fact was the distinctive characteristic of the mines in that district was their productiveness in depth—in fact, that they could not be depended upon until something like a depth of 130 fms. was reached. He would ask, could any reasonable man for one moment suppose that the whole of the tin in Harriett was between the 100 and the 115 fm. levels, when they remembered that it was situated, as it were, in the very core of metal-bearing strata, the productiveness of which increased as the depth was extended? If such should prove to be the case, of which there was not the least probability, position, indications, and analogy could no longer be accepted as any criterion of success. (Hear, hear.)

Mr. SNOW had much pleasure in proposing the re-election of the committee of management, which, being seconded by Mr. McCALLAN, was put and carried unanimously. The CHAIRMAN, in acknowledging the compliment on behalf of himself and colleagues, assured the shareholders that they would continue to promote to the utmost the best interests of the undertaking. They would endeavour to continue to give satisfaction, and to merit the confidence of the shareholders.

A vote of thanks to the Chairman terminated the proceedings.

NORTH MINERA MINING COMPANY.

A general and special general meeting of shareholders was held at the company's offices, Crown-court, Threadneedle-street, on Thursday,

Mr. T. P. THOMAS (managing director) in the chair.

Mr. C. W. THOMAS (the secretary) having read the notice convening the meeting, submitted a statement of accounts for the quarter, of which the following is an abstract:—

Balance last audit £ 79 16 0

Lead sold 626 4 1

Received on account of forfeited shares 19 7 6 = £725 7 7

February cost £315 14 4

March ditto 177 18 11

April ditto 158 12 10

Secretary's salary (three months) 26 5 0

Directors' fees (three months) 15 15 0

Surveyor 17 18 6

Banker's commission 3 6 9

Office expenses, &c. 3 3 0 = 718 14 4

Leaving cash balance £ 6 13 3

The assets (including the value of the machinery, &c.) exceeded the liabilities by 1931l. 8s. 6d. The report of the managing director was read, as follows:—

May 22.—Since the last meeting we have discontinued the chief of our stopes and the explorations of our counter lode, and have confined our operations to sinking the eastern shaft, sinking a winze below the 45 yard level, west of shaft, and driving on and stopeing a piece of ore ground in back of the 15, also west of shaft. The shaft is now down 8 fms. below the 15, several fathoms being in good ore ground. The bottom is looking promising, being spotted throughout with lead ore. The shaft being perpendicular, and the lodes underneath north and south, we have no right to calculate upon ore until we cross-cut to them, which we shall do when we have sunk about 4 or 5 fms. deeper. When the lodes left the shaft they were productive, and they will, no doubt, be found equally so in depth. The winze below the 45 yard level has been sunk through a good course of ore about 2½ fms., but the last 9 feet has been through a bed of shale. We have now got through the shale, and, from the appearance of the ground, I expect an improvement daily. The lode in the back of the 15, west of shaft, is looking well, producing from 1 to 1½ ton of ore per fm., and improving daily. This lode is dipping north of the 15, and will, I think, intersect or lead us to our main lode. I cannot report the rich courses of ore in sight within the shaft at the bottom of the 45 yard level, nor can I see my way to develop the mine in depth for the next six or twelve months without the most assistance from the shareholders; but, looking at the productiveness of the ore ground shallow, and the congenial appearance of the ground and lodes as we sink, I have equal confidence to what I ever had of ultimately laying open a great and profitable mine.—T. P. THOMAS.

The report of the agent was read, the chief points of which are referred to in the report of the managing director.

The CHAIRMAN said it had been seen by the balance-sheet just presented that the cost had of late been much reduced, the operations at the mine having been re-commenced. The rich course of ore which they had in the shallow levels had, naturally enough, induced them to give greater attention for the time to that part of the mine rather than to its development in depth. Recently, however, the operations had been confined entirely to the sinking of the shaft and winze. As far as the intrinsic value of the property was concerned, his opinion remained unchanged, and he confidently believed that upon cutting the lodes, which would be done in about 4 or 5 fms. further sinking, the mine would be in a very altered position. As regards his official connection with the company, seeing that the operations at present were upon so small a scale, and it being so desirable that everything should be conducted with the utmost economy, he was content to relinquish his salary, and only to charge his expenses attending his visits to the mine, allowing his future remuneration to be regulated by the success of the mine.

A SHAREHOLDER considered that their managing director being willing to allow his remuneration to be dependent upon the results that the mine might produce was the most satisfactory proof of his opinion of the real merits of the property in view.

The reports were received and adopted, and the accounts passed and allowed. A discussion ensued relative to the directors' remuneration, when the consideration of the subject was deferred till the next meeting.

The meeting was then made special, for the purpose of taking into consideration the property or otherwise of increasing the company's capital.

The CHAIRMAN said the object of the present meeting was for the proprietors to determine whether fresh capital should be raised, or the mine abandoned. By his report it would be seen that one of these steps must be taken. If it were decided to raise fresh capital, he would suggest that the mode proposed would be a practicable one, for it was of no use adopting a plan which would fail in realising the object in view. The had already tried the experiment of raising capital by the issue of 5000 (11.) shares, at 12s. discount, but only about 1400 were taken up during the time allowed. But he communicated with his friends, and made a market for the shares, and they were taken up by parties, but who immediately sold them when a small profit was to be realised. Thus the plan had proved a complete failure, and the shares were now quoted at 3s. to 5s. Under these circumstances, it would be useless to issue any more shares at a discount. He would counsel him that the only way to raise capital was by holding out an inducement to the public to come forward and take shares, in the event of shareholders not doing so. He was so confident that the necessary funds could be raised by the terms which he was about to propose, that he undertook to find people to take up the whole of the shares, if they were not taken up by the shareholders. The terms were these—to issue 5000 (11.) shares, to bear a preferential dividend of 20 per cent. per annum, and to participate with the ordinary shares in the remaining profits.

Mr. MILFORD said there could be no doubt that the issuing of shares at a discount had proved a failure; and it was now a matter of necessity, if capital was to be raised, that such advantages should be offered as would induce people to come forward and accept the shares.

Mr. LELAND suggested that Captain Nancarrow's report should be printed and circulated among the shareholders. It was a very favourable report, and coming from such an authority as Captain Nancarrow, it might tend to increase the confidence of the shareholders in the merits of the

BARCLAY'S PATENT STEAM AND WATER

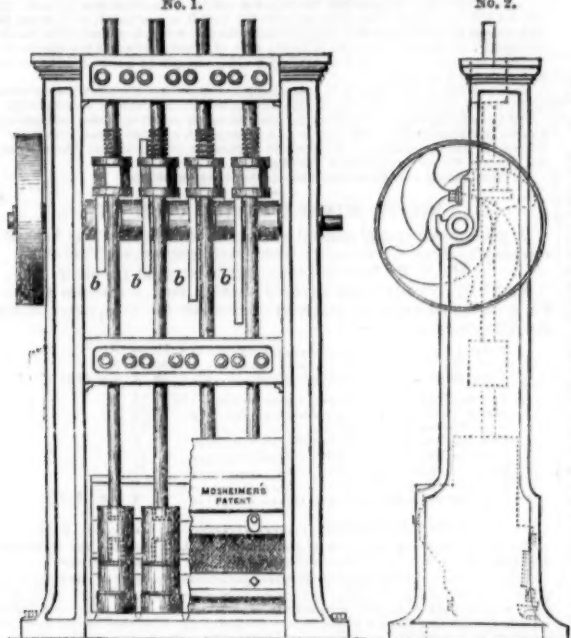
PRESSURE AND VACUUM GAUGES.
THESE GAUGES ARE MADE TO INDICATE ANY PRESSURE FROM ONE TO TWENTY THOUSAND POUNDS UPON THE SQUARE INCH.
EACH GAUGE IS GUARANTEED FOR FIVE YEARS.



PATENTEE AND MAKER,
ANDREW BARCLAY,
ENGINEER,
KILMARNOCK.

MOSHEIMER'S PATENT STAMPS.

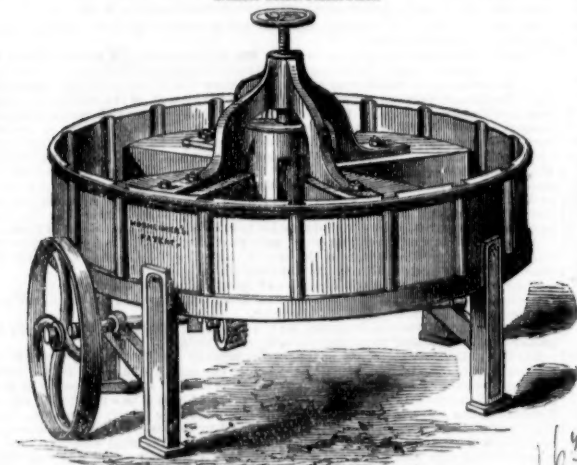
MANUFACTURED BY DUNN AND CO., SALFORD,
NEAR MANCHESTER.



These STAMPS are CONSTRUCTED ENTIRELY OF IRON, and are ADAPTED FOR CRUSHING EVERY DESCRIPTION OF ORE, MORE ESPECIALLY FOR REDUCING GOLD ORES, as in consequence of the mortars (coffers) being solid NONE OF THE PRECIOUS METAL can be LOST. They may be erected on either a stone or wood foundation, are more durable, the wear and tear being much less, and CRUSH TWENTY-FIVE PER CENT. MORE THAN THE ORDINARY STAMPS. Several sets may be seen in the gold district, near Dolgelly, —For particulars, apply to Mr. Jos. MOSHEIMER, Dolgelly, North Wales.

MOSHEIMER'S PATENT GOLD AND SILVER AMALGAMATING MACHINES.

MANUFACTURED BY DUNN AND CO., SALFORD,
NEAR MANCHESTER.



This AMALGAMATOR is the MOST ECONOMICAL and PERFECT MACHINE in use, and being SIMPLE in CONSTRUCTION, and REQUIRING NO FOUNDATION, it may be put up in a few hours. More gold can be extracted by this amalgamator than by any other, this having been sufficiently proved by the gold extracted from the tailings worked in this machine from the Welsh gold mines. The process is both mechanical and chemical, and the amount of ore worked by each machine is about 1 ton per day. —For particulars, apply to Mr. Jos. MOSHEIMER, Dolgelly, North Wales.

MINES AND MINING.**STATISTICS OF AND OBSERVATIONS UPON THE MINES OF CORNWALL AND DEVON.**

Illustrated by Maps, Plans, and Sections of the Principal Mining Districts in the two counties.
By Mr. THOMAS SPARGO,
Mining Engineer, Stock and Sharebroker, Gresham-house, Old Broad-street, London.
It contains detailed particulars of the indications and prospects of all the important mines in the two counties, with annual statistical returns, and dividends paid by each; sections and diagrams of the most productive districts, with explanatory notes upon each; and also a map of Cornwall, showing its area and population.

OPINIONS OF THE PRESS.

The mine proprietors of the Western counties have good reason to congratulate themselves that so able an advocate of British Mining as Mr. Thomas Spargo has devoted his energies to the extension of mining literature; while capitalists embarking in mine adventure will thank him for placing requisite and very desirable knowledge so immediately within their reach. Under the title of "The Statistics of and Observations upon the Mines of Cornwall and Devon," Mr. Spargo has issued a manual of statistics and instructive details which cannot fail to be useful to those seeking information. That his explanations may be more readily comprehended, he has illustrated his work with a series of very neatly executed maps of the several mining districts to which he refers. —*Mining Journal*.

The work altogether forms an acceptable addition to the existing stock of mining literature, and may be commended to the attention of those who wish to extend their acquaintance with this branch of our home industry. —*Daily News*.

Mr. Spargo's "Statistics of and Observations upon the Mines of Cornwall and Devon" deserves to be perused by all parties who are interested in these investments, and the facts and opinions presented appear to be stated in a fair and candid manner. —*Herald*.

Mr. Spargo's Statistics is full of information useful to parties associated either practically or commercially with mining undertakings. —*Star*.

An instructive publication, deserving of every encouragement. —*Daily Telegraph*.

We recommend this work as a guide to the mines of Cornwall and Devon. —*Chronicle*.

The pamphlet is worthy the attention of all engaged in mining speculations. —*Post*.

It contains in a compressed, but still comprehensive form, all the information requisite to guide an adventurer in the selection of mines for legitimate investment. —*Wellsman*.

From these the mining speculator may arrive at a correct judgment on all mining undertakings. —*Shropshire Conservative*.

No adventurer should enter upon any mining undertaking until he has carefully studied this pamphlet. He will find it a true guide when seeking for a profitable investment. —*Durham County Advertiser*.

A work of rare merit, filled with original matter, concise but comprehensive, and will be found of inestimable value to parties desirous of investing capital in mining undertakings. —*Doncaster Chronicle*.

A guide to safe investments, and should be consulted by an intended investor before purchasing shares in any mining undertaking. —*Cheltenham Chronicle*.

It contains accurate information upon all points demanding consideration, and as the work of a practical miner may be confidently relied upon. —*Deconport and Plymouth Telegraph*.

This work will prove of great utility to all who are concerned in mining operations. —*This little work is of inestimable value to all persons interested in the mining operations of the country. —Blackburn Times*.

We earnestly recommend the consideration of Mr. Spargo's book to all mining speculators. —*Hereford Journal*.

This work should be read by every man interested in mining adventures. —*Edinburgh*.

An excellent practical treatise upon an important staple of our commerce, the mines of Cornwall. —*Langport Herald*.

We recommend this pamphlet to the attentive consideration of our readers. —*Halifax*.

We earnestly recommend the work to our readers. —*Lynn Record*.

This work ought to have attentive consideration, and when acted upon will prove a safe guide to all investors in mining undertakings. —*Oldham Chronicle*.

Mr. Spargo's practical work affords the means of obtaining such a knowledge as cannot fail to guide the reader to safe investments. —*Lincolnshire Herald*.

GEORGE SPILL & CO.'S IMPROVED MACHINERY BELTING,

WARRANTED NOT AFFECTED BY HEAT, WATER, OR GREASE, AND MADE TO ANY LENGTH IN ONE PIECE.

PRICES PER FOOT RUN.

Inches wide.	1	1½	2	2½	3	3½	4	4½	5	5½	6	7	8	9	10	11	12
No. 1 substance.	0 3	0 4	0 6	0 7	0 9	0 10	1 0	1 1	1 3	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8
No. 2 substance.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
No. 3 substance.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

These Beltings (unlike the ordinary manufactures) are woven into one solid substance from the best flax yarn, and saturated with a compound to consolidate them, which is not liable to decomposition. They possess extraordinary strength, as the following certificate will verify, which renders them particularly adapted for paper and saw mills, threshing machines, grain elevators, foundries, machine shops, &c.

COPY OF CERTIFICATE, FROM THE PORT OF LONDON CHAIN CABLE PROOF HOUSE.
THIS IS TO CERTIFY, that the tensile strength of Machinery Belting, manufactured by Geo. Spill & Co., of Hackney Wick, London, as proved by my chain cable testing machine, at Rotherhithe, to be as follows, viz.:

No. 1 substance.	5 in. wide, broke at the strain of	6,272 lbs., or, for every inch of width, 1254 lbs.
No. 2 substance.	6 in. wide, " "	7,448 lbs., or, for every inch of width, 1489 lbs.
No. 3 substance.	10 in. wide, " "	15,663 lbs., or, for every inch of width, 1566 lbs.
A stout leather band.	4 in. wide, " "	2,100 lbs., or, for every inch of width, 525 lbs.

July 9, 1862.
Manufacturers of India rubber. Double texture and oiled waterproof cart, rick, and wagon sheets, made up at price per square yard. Farmers' gaiters, buskins, and farm labourers' waterproof garments.
WORKS, HACKNEY WICK, N.E.;
DEPOT, 149, CHAPSIDE, E.C., LONDON, AND 9, HIGH STREET, BRISTOL.

HENRY HUGHES, FALCON WORKS, LOUGHBOROUGH.

This LOCOMOTIVE ENGINE has been DESIGNED expressly for CONTRACTORS and MINERAL RAILWAYS. It is VERY STRONG in EVERY PART, and being mounted on small wheels close together, will MOUNT STEEP GRADIENTS and SHARP CURVES.

The BOILERS are of the BEST PLATES, with fire-boxes of Low Moor, are clothed with hair felt, lagged and covered with sheet iron, and PROVED to a PRESSURE OF TWO HUNDRED POUNDS PER SQUARE INCH.

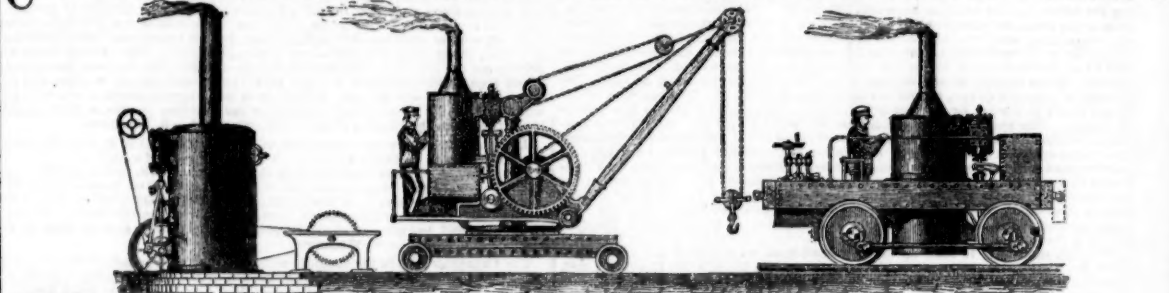
The TYRES are of the BEST YORKSHIRE IRON, and of GREAT THICKNESS. The tank contains 250 gallons.

The FITTINGS consist of BUFFERS, POWERFUL BRAKE, GIFFARD'S INJECTOR, ROSCOE'S OILING APPARATUS, PRESSURE GAUGE, WATER GAUGE, and BLOWER to GET UP STEAM.

The engines are all tried before leaving the works, and an experienced man sent with them free of cost.

Full specification on application.
10 in. cylinders, 15 in. stroke, price £500.

Prize Medal, International Exhibition, 1862.

CHAPLIN'S PATENT PORTABLE STEAM ENGINES AND BOILERS.

From the STRENGTH, SIMPLICITY, and COMPACTNESS of these ENGINES, they are now extensively used for general purposes; also in situations where steam-engines of the ordinary construction cannot be applied.

STATIONARY ENGINES.—require no building in, nor chimney stalk, and with our patent forced combustion apparatus will burn inferior qualities of coal, wood, or peats. These engines are specially suited for shipment, and may be packed inside the boiler, to economise freight.

PORTABLE STEAM CRANES.—for wharf or railway, with wrought-iron carriages on wheels, link motion, foot brake, &c., all under the easy control of one man; the larger sizes hoist, lower, and turn round in either direction by steam.—These Cranes were selected by H.M. Commissioners for receiving and sending away the heavy machinery at the International Exhibition of 1862.

CONTRACTORS' LOCOMOTIVES.—are adapted to work on rails or tramways, of a gauge from 2 feet upwards. They are complete and efficient locomotives, simple in construction, and the working parts easily got at for repair. They draw heavy loads at reduced speeds. These engines are usually sent in one package, ready for work on arrival.

LIGHT PORTABLE HOISTING, WINDING, AND PUMPING ENGINES, ETC.

ALEXANDER CHAPLIN AND CO., CRANSTONHILL ENGINE WORKS, GLASGOW.

LONDON OFFICE,—9, ADAM STREET, ADELPHI, W.C. LONDON DEPOT AND WHARF,—LOWER FORE STREET, LAMBETH, S.

Several engines of each class kept in stock, for sale or hire; and all our manufactures GUARANTEED as to EFFICIENCY, MATERIAL, and WORKMANSHIP.

Parties are cautioned against using or purchasing imitations or infringements of these patent manufactures.

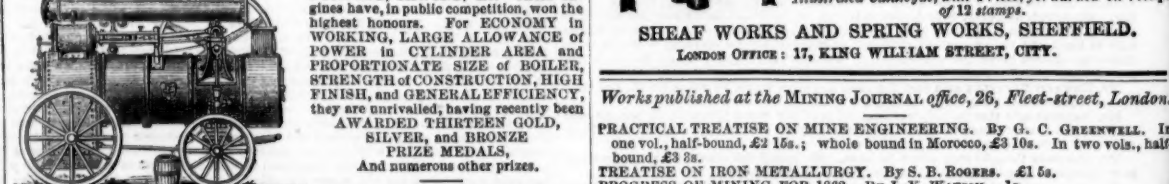
International Exhibition, 1862—Prize Medal.

JAMES RUSSELL AND SONS
(the original patentees and first makers of wrought-iron tubes), of the CROWN PATENT TUBE WORKS, WEDNESBURY, STAFFORDSHIRE, have been AWARDED a PRIZE MEDAL for the "good work" displayed in their wrought-iron tubes and fittings.
Warehouse, 81, Upper Ground-street, London, S.

Prize Medal, International Exhibition, 1862.

RUSTON, PROCTOR, AND CO.'S CELEBRATED PRIZE PORTABLE ENGINES

are SPECIALLY ADAPTED FOR WINDING, PUMPING, SAWING, &c. These engines have, in public competition, won the highest honours. For ECONOMY in WORKING, LARGE ALLOWANCE OF POWER in CYLINDER AREA and PROPORTIONATE SIZE OF BOILER, STRENGTH OF CONSTRUCTION, HIGH FINISH, and GENERAL EFFICIENCY, they are unrivalled, having recently been AWARDED THIRTEEN GOLD, SILVER, and BRONZE PRIZE MEDALS, and numerous other prizes.



Messrs. A. Knowles and Sons write:—
Pendlebury Colliery, near Manchester, June 5, 1861.

GENTLEMEN,—We beg to inform you that we have now in use the portable engine of 8 horse power you supplied us with, and have great pleasure in informing you that it works well, and we are much pleased with the workmanship and finish of it.

We are, yours respectfully,
ANDREW KNOWLES AND SONS.

Illustrated, descriptive, and priced catalogues may be had on application to the Sheffield Ironworks, Lincoln.

PUBLIC TEST OF WIRE-ROPE.

THE SUPERIOR QUALITY OF GARNOCK, BIBBY, AND CO.'S WIRE-ROPE WAS FULLY PROVED BY A RIVAL MANUFACTURER at the LIVERPOOL PUBLIC TESTING MACHINE, on the 29th of October, 1860, on which occasion GARNOCK, BIBBY, and Co.'s ropes were found to be the STRONGEST of all the TWELVE SAMPLES from different makers then tested, as reported in the papers of the day. For example:—

(Certified by Mr. William Macdonald, superintendent.)

Garnock, Bibby, and Co., Corresponding sizes from other manufacturers.

Sizes. Tons c. Tons c. Tons c. Tons c.

3½ in. 18 5 16 10 11 10

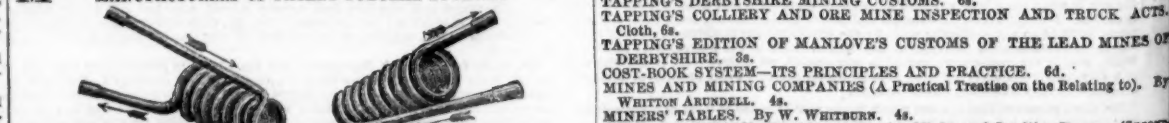
2½ in. 8 15 7 15 5 0

Remaining sizes with similar results.

* Samples taken promiscuously from stock by a rival manufacturer's agent.

GARNOCK, BIBBY, AND CO., SWAN HEMP AND WIRE ROPE MANUFACTURERS, LIVERPOOL.

FLAT and ROUND STEEL and IRON WIRE ROPES for MINES, &c., of SUPERIOR QUALITY.

MESSRS. KNOWLES AND BUXTON, CHESTERFIELD, MANUFACTURERS OF PATENT TUBULAR TUYERES.

The PATENT TUBULAR TUYERE possesses GREAT ADVANTAGES over the ORDINARY TUYERES, both for its DURABILITY and EASY WORKING. A current of cold water going direct to the nozzle prevents their destruction, however much they may be exposed to the fire.

We repair them at half the first cost, making them equal in size to new ones, all parties returning their carriage paid.

No. 1 tuyere, 16 in. long 28s. each.

No. 2 " 18 " 32s. "

No. 3 " 20 " 36s. "

No. 4 " 22 " 40s. "

No. 5 " 24 " 44s. "

Delivered at Chesterfield station. Terms, nett cash quarterly.

TO INVENTORS.—All INTENDING PATENTEES should procure the PRINTED INFORMATION regarding PATENTS, their COST and the MODE OF PROCEDURE to be adopted, ISSUED GRATIS by the GENERAL PATENT COMPANY (LIMITED), 71, FLEET STREET, LONDON.

R. MARSDEN LATHAM, Sec.

THOMAS TURTON AND SONS,

MANUFACTURERS OF CAST STEEL FOR PUNCHES, TAPS, and DIES, TURNING TOOLS, CHISELS, &c.

CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT and CRANK AXLES, SHAFTS, and FORGINGS OF EVERY DESCRIPTION.

DOUBLE SHEAR STEEL, FILES MARKED T. TURTON.

BLISTER STEEL, SPRING STEEL, EDGE TOOLS MARKED WM. GREAVES & SON.

GERMAN STEEL, Locomotive Engine, Railway Carriage and Wagon Springs and Buffers.

Illustrated Catalogue, with Prices, forwarded on receipt of 12 stamps.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD.

LONDON OFFICE: 17, KING WILLIAM STREET, CITY.

Works published at the MINING JOURNAL office, 26, Fleet-street, London.

PRACTICAL TREATISE ON MINE ENGINEERING. By G. C. GREENWELL. In one vol., half-bound, £2 10s.; whole bound in Morocco, £3 10s. In two vols., half-bound, £3 3s.

TREATISE ON IRON METALLURGY. By S. B. ROGERS. £1 5s.

PROGRESS OF MINING FOR 1862. By J. Y. WATSON. 1s.

STATISTICS OF MINING (ANNUAL). By W. H. CUELL. 6d.

CORNISH NOTES. By J. Y. WATSON F.G.S. 1s.

BRITAIN'S METAL MINES. By J. E. PIKE. 1s. 6d.; by post, 1s. 8d.

ORIGIN AND PROGRESS OF MINING in the CARABOND and LISKEARD DISTRICTS. By WEBB and GEACH. 1s. 6d.; by post, 1s. 8d.

NEW GUIDE TO THE IRON TRADE, OR MILL MANAGERS' AND STOCK-TAKERS' ASSISTANT. By JAMES ROSE. 8s. 6d.

STOCKTAKERS' ASSISTANT AND OFFICE COMPANION. By J. PARIS. 7s. 6d.

MINING AND SMELTING MAGAZINE. Monthly. 1s.

DUNLOP'S CALCULATOR FOR MULTIPLICATION AND DIVISION. 1s. 6d.

CORNWALL AND DEVON MINING DIRECTORY. 1s. 6d.

BOOK-KEEPING BY DOUBLE ENTRY, EXPRESSLY ADAPTED FOR THE IRON TRADE. By G. J. WILLIAMS. Cloth, 10s. 6d.

HOW TO PREVENT ACCIDENTS IN COLLIERIES. By M. DUNN. 1s.

VENTILATION OF MINES, FOR THE USE OF UNDERGROUND MANAGERS AND OVERMEN. By RALPH MOORE. 5s.

SECTION OF LANARKSHIRE COAL MEASURES (NEW EDITION). By P. MOORE. 10s. 6d.

MINERAL VEINS: AN ENQUIRY INTO THEIR ORIGIN, FOUNDED UPON A STUDY OF THE AUSTRERFER QUARTZ VEINS OF AUSTRIA. By THOMAS BRET. 2s. 6d.; by post, 2s. 8d.

ERRONEOUS COLOURING OF THE MAPS OF THE GOVERNMENT GEOLOGICAL SURVEY OF IRELAND. 1s.

MINERS' MANUAL OF ARITHMETIC AND SURVEYING. By WM. RICKARDS. 10s. 6d.; by post, 11s.

TRANSACTIONS OF THE NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS. Eleven volumes: 21s. per volume. [Single copies can be had.]

TABLES FOR ASCERTAINING THE VALUE OF TINSTUFF. By Capt. CHARLES THOMAS. 5s.

TAPPING'S HIGH PEAK MINING CUSTOMS. 5s.

TAPPING'S HANDBOOK ON MERCANTILE, MINING, AND OTHER JOINT STOCK COMPANIES. 2s. 6d.

THE COST-BOOK—TAPPING'S PRIZE ESSAY—WITH NOTES AND APPENDIX. 5s.

TAPPING'S DERBYSHIRE MINING CUSTOMS. 6s.

TAPPING'S COLLIERY AND ORE MINE INSPECTION AND TRUCK ACTS. Cloth, 6s.

TAPPING'S EDITION OF MANLOVE'S CUSTOMS OF THE LEAD MINES OF DERBYSHIRE. 3s.

COST-BOOK SYSTEM—ITS PRINCIPLES AND PRACTICE. 6d.

MINES AND MINING COMPANIES (A Practical Treatise on the Relation to). By WHITTON ARUNDELL. 4s.

MINERS' TABLES. By W. WHITBURN. 4s.

MINING GLOSSARY—English and Foreign Mining and Smelting Terms. (SECOND EDITION). 2s.

REMARKS ON THE GEOLOGY OF CORNWALL AND DEVON. By Capt. CHAS. THOMAS, of Dolcoath Mine, Cornwall. 1s. 6d.

ON COPPER SMELTING. By HYDE CLARKE, C.E. 1s.

FORM OF "TACK-NOTE." 5s.

COAL MINES INSPECTION ACT. 6d.

VENTILATION OF COAL MINES. 3d.

CLEVELAND IRONSTONE. By JOSEPH HEWICK. Cloth, 71s.; by post, 71s. 6d.

MASTERS AND WORKMEN. By MARK FETTER. 6d.

DEVONSHIRE GREAT CONSOLIDATED MINING COMPANY, DESCRIPTION OF THE MINES AND MACHINERY. 6d.

INVENTIONS, IMPROVEMENTS, AND PRACTICE, OF A COLLIER ENGINEER AND GENERAL MANAGER. By BENJAMIN THOMPSON. 6s.

NEW WORK ON GAS, &c. By W. HOPTON. 1s.

LONDON: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH, the proprietors, at their office, 26, FLEET-STREET, where all communications are requested to be addressed. [May 30, 1863.]